QDR 2001

STRATEGY-DRIVEN CHOICES FOR AMERICA'S SECURITY

Edited by
Michèle A. Flournoy

NDU QDR 2001
Working Group

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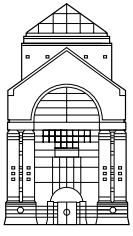

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Foreword

Every new Presidential administration seeks to implement its policy objectives rapidly, but in the vast organization of the U.S. Government, such changes take time. The Quadrennial Defense Review (QDR) of 2001 offers the new Bush administration an important opportunity, as well as a great responsibility, to reexamine America's defense priorities in a comprehensive, top-to-bottom, strategy-to-program approach and provide early guidance for change. This is a gargantuan task. Current legislation requires the final report of QDR 2001 to be provided to Congress in September 2001. Even with early Senate confirmation of top defense officials, completing such a thorough review in just 8 months is a daunting charge. One of the lessons learned during QDR 1997 was that advance efforts to identify key issues for the review process can be critical to success.

Fortunately for the incoming administration, an independent effort to develop intellectual capital for QDR 2001 was started in the autumn of 1999. This effort consisted of a small working group which was chartered by the Chairman of the Joint Chiefs of Staff, and established in the Institute for National Strategic Studies at the National Defense University (NDU). Leading the group was Michèle A. Flournoy, a veteran of the QDR 1997 effort and the former Principal Deputy Assistant Secretary of Defense for Strategy and Threat Reduction. This volume is a product of the group's work as well as contributions from outside experts associated with the project. A major conference on the project was held at NDU in November 2000, at which a final report was issued. This book provides the intellectual underpinnings of that report.

To some extent this book is—as noted in the introduction—very much like the results of screening at an archeological dig. The issues in this book are not new; they were already part of the defense policy debate of our great democracy. But the authors carefully unearthed—stratum by stratum—insights and options in a systematic manner, placing the issues in context. No defense issue lives in isolation; all are part of the process of priority-setting that is required to craft a successful strategy in the context

of a finite budget. To help the new administration set its priorities, the working group and outside contributors have outlined a series of integrated paths that lead from strategy alternatives to force-sizing criteria to force structure and other programmatic issues, and they identify the forks in each path and the signposts along the way.

This valuable book provides a unique service to the Department of Defense and the Nation, whether the new administration uses the QDR or some other review process as its primary vehicle for setting defense priorities. It represents an effort to transcend both the tyranny of the urgent and the bureaucratic rivalries that tend to dominate the analyses conducted within the Pentagon. It does so in a practical, logical, and supportive manner. It does not provide solutions but instead offers options from which the Bush administration can craft a new defense policy. In a sense this book represents a consummate menu of choices: an outside view that only knowledgeable insiders could provide.

There are options identified in this book that some people might support enthusiastically, and others the same people might strongly oppose. But no one can fail to be impressed by the fairness of this effort and the professional skill with which it was completed. As members of a bipartisan team of senior advisors, we periodically reviewed the research of the working group. While we do not necessarily support all of their findings—neither individually nor collectively—we have been continually impressed by the quality and soundness of their logic.

Thus, this book represents a service to the Department of Defense and the new administration with few parallels. It provides an excellent starting point for a review of defense strategy, policies, and programs.

Richard L. Armitage

Barry M. Blechman

Michael J. Dugan

George A. Joulwan

Charles R. Larson

Arnold L. Punaro

Martin R. Steele

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The working group comprised myself and four truly exceptional officers: Lieutenant Colonel Kenneth F. McKenzie, Jr., USMC; Lieutenant Colonel Philip M. Ruhlman, USAF; Lieutenant Colonel John J. Spinelli, USA; and Captain Sam J. Tangredi, USN. Their extraordinary contributions were critical to the success of the overall project and to the completion of this book. Each made invaluable substantive contributions, and they formed a superb team. Without their efforts, this project would have been immeasurably reduced in scope, quality, and importance. I feel privileged to have worked with them. Moreover, I am grateful to the service chiefs for sending their best and brightest officers to work with me as colleagues for 15 months.

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I am also indebted to two groups that regularly reviewed and commented on our work. A group of stakeholders—representatives of the Office of the Secretary of Defense, Joint Staff, services, and unified commands—gave us candid reactions and helpful insights from inside the Pentagon as well as from the field and the fleet. In addition, a group of senior advisors—seasoned defense practitioners, both civilian and military,

Republican and Democrat—offered invaluable perspectives and advice. They included Richard L. Armitage; Barry M. Blechman; General Michael J. Dugan, USAF (Ret.); General George A. Joulwan, USA (Ret.); Admiral Charles R. Larson, USN (Ret.); Arnold L. Punaro; Lieutenant General Martin R. Steele, USMC (Ret.); and Dov S. Zakheim. I am deeply grateful to each for his insights, time, and support. Although the working group benefited enormously from the input of both groups, we do not speak for them, nor were any members of these two groups asked to endorse the conclusions and recommendations found in this volume, which remain the views of the authors alone.

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I am especially grateful to those who were not part of the working group but agreed to contribute chapters to this volume: M. Elaine Bunn, Roger Cliff, Richard L. Kugler, Michael E. O'Hanlon, and Christine E. Wormuth. Thanks are also due to those who reviewed draft chapters and provided valuable comments to the authors, including Peter Dombrowski, David Gordon, Paul F. Herman, Frank G. Hoffman, Andrew F. Krepinevich, Jr., Michael Krepon, John R. Landry, John LeHockey, James Miller, Clyde T. Owan, Scott Trout, Michael Wheeler, and staff of various members of our Stakeholders group.

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Finally, I want to express my deepest appreciation to my husband, W. Scott Gould, my children, Alexander and Victoria, and Mireya Vargas, as well as the families of the other working group members. Without their love, support, and patience, this book would not have been possible.

Michèle A. Flournoy
Editor and Project Director

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STRATEGY-DRIVEN CHOICES FOR AMERICA'S SECURITY

Chapter One

Introduction: Twelve Strategy Decisions

by Michèle A. Flournoy

The 2001 Quadrennial Defense Review (QDR) presents the President, the Secretary of Defense, and the Chairman of the Joint Chiefs of Staff (CJCS) with an invaluable opportunity and a tremendous responsibility. The QDR offers the opportunity to articulate a compelling defense strategy for protecting and advancing U.S. national interests and to develop a sound programmatic and budgetary blueprint to realize that strategy. At the same time, the QDR brings with it the responsibility to address a mismatch between defense strategy and resources estimated at between $30 billion and $50 billion per year.[1] This mismatch must be addressed not simply because it exists—many would argue that there will always be such a gap—but because of the highly corrosive effects it will produce over time: serious tempo and readiness strains, chronic inability to meet modernization objectives, deterioration of the morale and quality of life of the force, and recruiting and retention shortfalls. If these pitfalls are to be avoided and the unparalleled quality of the U.S. military maintained, the next administration must make hard choices to close the gap between strategy and resources.

The Iron Triangle: Spend More, Cut Costs, or Do Less

Since 1990, no fewer than five major defense reviews have occurred: the Base Force Review (1991), the Bottom-Up Review (1993), the Commission on Roles and Missions of the Armed Forces (1993), the Quadrennial Defense Review (1997), and the National Defense Panel (1997). Yet the strategy-resources gap has persisted and, in recent years, widened. This persistence suggests that the new administration will have to take a somewhat different approach than its predecessors if the 2001 QDR is to be successful. Most importantly, it must be willing to make a

more fundamental and difficult set of choices. The magnitude of the strategy-resources mismatch and the damage it will cause over time demand that the next administration take substantial action in one or more of three key areas: increasing the level of resources devoted to defense; working with Congress to take advantage of potential "tradespace" in the defense program—that is, making tradeoffs that reduce costs while keeping risk at an acceptable level; or changing the defense strategy to reduce the demands placed on the U.S. military. This fundamental set of choices—spend more, cut costs, or do less—might be called the iron triangle of the 2001 QDR, and it will require substantial political will and leadership on the part of the new administration.

In reality, all three legs of the iron triangle may need to be adjusted to bring strategy and resources into alignment. Although the new administration and the new Congress probably will support an increase in defense spending, the level of increase is unlikely to be sufficient to close the projected strategy-resources gap completely. Increasing defense spending by $30 billion–$50 billion per year is more than the political traffic will bear, given the broad range of competing priorities, even considering the projected surplus.

This suggests that any increase in the defense topline will have to be accompanied by efforts to identify potential tradespace—changes to the defense program that would reduce costs without incurring undue risk. For example, the tradespace of a given strategy might include eliminating excess infrastructure, canceling a particular modernization program, or reducing or converting an underutilized part of the force structure. Some argue that after a decade of cutting budgets and forces, little or no tradespace is left in the Department of Defense (DOD). However, others argue that substantial efficiencies and savings still can be had in such areas as reducing excess infrastructure, reforming personnel management systems, and adopting better business practices throughout DOD.[2] Although all of the low-hanging fruit may already have been picked, additional tradespace does exist, and further efficiencies must be part of any solution to the strategy-resources problem. Taking advantage of this tradespace, however, may require some fairly heroic acts on the part of both the new administration and the new Congress. The new defense leadership must demonstrate its willingness to make hard choices and break some long-cherished rice bowls within the Department. And the new Congress must, in some cases, put aside the politics of pork to enable the Department to reduce or eliminate low-priority programs, close or convert excess infrastructure,

and change inefficient ways of doing business. This effort will require extraordinary leadership from the President, his defense team, and key members of Congress, as well as a willingness to spend significant amounts of the new administration's political capital on defense. This is a tall order but not an impossible one if the parties understand that the long-term health of the U.S. military hangs in the balance.

The final element in this equation is the defense strategy: what the President calls on the U.S. military to be able to do in peace and in war. The strategy-resources mismatch will require the new administration to be more explicit about its defense priorities—where it chooses to place emphasis and where it chooses to accept or manage a degree of risk. If the combination of anticipated increases in defense spending and anticipated savings from the tradespace is insufficient to close the projected $30 billion–$50 billion annual shortfall, the new administration will have to make hard choices about reducing the demands placed on the U.S. military while continuing to protect and advance American interests.

The NDU QDR Working Group

For these reasons, in September 1999 the Chairman of the Joint Chiefs of Staff, General Henry Shelton, established the QDR 2001 Working Group at the National Defense University (NDU). Directed by Michèle Flournoy, the group comprised four officers, each one chosen by their service: Lieutenant Colonel Frank McKenzie, USMC; Lieutenant Colonel Philip Ruhlman, USAF; Lieutenant Colonel John Spinelli, USA; and Captain Sam Tangredi, USN.

The primary objective of the working group was to help build intellectual capital for the next QDR. The project was based on the premise that a small group outside the Pentagon could serve as an independent and unbiased body to identify issues, develop options, and provide insights for those who will participate in the next review. The working group focused most of its efforts on areas where bureaucratic politics or election-year politics would make analysis inside the Pentagon difficult or impossible: defense strategy alternatives, criteria for sizing U.S. conventional forces, and force structure and capability issues.[3] In an effort to address the broader range of issues that will be important in the QDR, the working group commissioned a number of outside experts as chapter authors; their work is presented in several chapters of this volume.[4]

The working group benefited greatly from the advice and counsel of two groups. A group of stakeholders—several dozen one-star and two-star

representatives of the Joint Staff, services, unified commands, and Office of the Secretary of Defense—met several times to review our work and provide us with candid reactions and helpful insights from inside the Pentagon as well as from the field and the fleet. In addition, a group of senior advisors chosen by the project director—seasoned defense practitioners, both civilian and military, Republican and Democrat—offered invaluable perspectives and advice.[5] They contributed a great deal to the intellectual capital that is presented in this book, but the views expressed in this volume do not necessarily represent theirs, and we do not speak for them. Similarly, although the project was cosponsored by the CJCS and the NDU Institute of National Strategic Studies, we do not speak for the Chairman, the President of NDU, or any other official in DOD, nor did any such official exert editorial control over any aspect of the project.

From its inception, the working group undertook a scoping effort designed to provide not answers but rather options, insights, and recommendations for further analysis. We aimed to help jump-start the review, not preempt it. The project might be compared to a big screen on an archaeological dig, designed to sift through vast amounts of material in an effort to identify the major finds worthy of more in-depth examination.

This book contains the analysis and insights of the working group's 15-month effort.[6] The initial chapters provide important context for the next QDR. Chapter 2 ("The Future Security Environment, 2001–2025: Toward a Consensus View") surveys the future security environment from 2001 to 2025 to identify the principal challenges and opportunities that should illuminate U.S. defense planning. Rather than taking a *tabula rasa* approach, it distills points of consensus, issues of debate, and potential wildcards from more than 300 sources on the subject and offers DOD decisionmakers some guideposts on what the U.S. military should plan for and what it should hedge against in the future. It also offers DOD a new and more robust methodology for assessing the future security environment in the QDR and beyond. Chapter 3 ("The Rise of Asymmetric Threats: Priorities for Defense Planning") argues that the unmatched power of the United States will lead future adversaries to use asymmetric strategies rather than to challenge the United States directly. The chapter surveys and categorizes a broad range of asymmetric threats in an effort to provide a framework for thinking about and ultimately prioritizing these threats in U.S. defense planning. It identifies the 10 most serious asymmetric threats and offers QDR decisionmakers options for improving the U.S. ability to deal with these challenges. Chapter 4 ("The Defense Budget:

Meeting Growing Requirements with Constrained Resources") paints a picture of the budgetary environment in which the QDR will be conducted, assessing not only projected budget trends but also recent trends within the defense budget that have contributed to the strategy-resources gap and make it difficult to address. It argues that pressures for additional defense spending are rising faster than the defense budget is likely to grow and that there are few, if any, easy or painless cost-cutting measures. This puts a premium on setting clear, strategic priorities and carefully examining the tradespace to determine what we truly need and what we can do without—risks to be minimized and risks that we are willing to accept.

Chapter 5 ("Defense Strategy Alternatives: Choosing Where to Place Emphasis and Where to Accept Risk") identifies the range of plausible defense strategy alternatives for the new administration. It describes where each strategy would place emphasis and where it would accept or manage a degree of risk, highlighting the most important strategy choices the new administration will have to make. It also assesses the strengths and weaknesses of each strategy. Many of the options discussed in subsequent chapters are derived from the set of strategy alternatives this chapter describes. It offers the Bush administration a menu of options that can be used singly or in combination to help jump-start the strategy development process in the QDR and thereby increase the chances that the strategy will drive the rest of the review.

A means of translating strategy into force structure options is outlined in chapter 6 ("Sizing Conventional Forces: Criteria and Methodology"). In the absence of any approved or common DOD approach to sizing U.S. conventional forces, it offers a transparent, step-by-step approach to force sizing that can be used with any strategy, highlighting the key decisions the administration will have to make in this area. As part of this process, it also lays out several force-sizing criteria alternatives to the current standard of preparing for two nearly simultaneous major theater wars. The chapter recommends that, whatever the strategy developed in the QDR, U.S. forces should be sized in a manner that takes into account not only the strategy's near-term warfighting requirements but also its priority peacetime demands as well as anticipated future capability requirements.

Although rigorous, transparent, and replicable risk assessments will be critical to supporting sound decisionmaking in the QDR, DOD does not have a methodology for such assessments. Chapter 7 ("Assessing Risk: Enabling Sound Defense Decisions") seeks to fill that void by offering a comprehensive and rigorous approach that could be used in the

QDR. It defines categories of risk, levels of risk, and metrics for measuring risk in an approach that is adaptable to any strategy and is compatible with a broad range of models and other analytic tools. Such an approach to risk assessment will be critical to enabling the QDR decisionmakers to make hard choices about where and how to accept or manage risk.

Chapter 8 ("Identifying Force Structure Issues: Sifting the Screen") identifies some of the force structure and capability issues that merit further analysis in the QDR. These issues generally fall into two baskets: approaches to reducing the costs of implementing a given strategy (potential tradespace candidates) and approaches to reducing the level of risk associated with a priority element of a strategy. The objective here is not to recommend specific force structure changes but rather to identify options and issues that merit a closer look in the QDR process.

Overseas military presence is examined in chapter 9 ("The Future of U.S. Overseas Presence") as well as whether this posture should be modified, and if so, how to reflect changes in both the security environment and in U.S. defense strategy. The chapter identifies issues that should be addressed in Europe, Asia-Pacific, and Southwest Asia, and offers options for modifying the U.S. posture in each region. Its aim is to build intellectual capital for the new administration as it reassesses in the QDR both the overseas presence requirements of its strategy and alternative ways of meeting those requirements.

Chapter 10 ("Peacetime Operations: Reducing Friction") provides a framework for understanding the broad range of peacetime operations the U.S. military conducts as well as the impact of these operations on warfighting readiness and on operations and personnel tempo. It identifies several key points of friction that need to be addressed, including how smaller-scale contingencies (SSCs) are funded, rotation base requirements, turbulence in the parent and sister units of deployed forces, and tempo strains in parts of the force that are in highest demand. It argues that unless the administration is willing to live with current levels of friction in the force, it faces a basic choice: reducing peacetime demands for U.S. forces or increasing their availability or supply for peacetime operations. The chapter recommends that several specific options for either reducing demand or increasing supply be considered in the QDR.

Two broad approaches to meet the challenges of the future are identified and assessed in chapter 11 ("Modernizing and Transforming U.S. Forces: Alternative Paths to the Force of Tomorrow"). Each alternative

offers a different approach to investment in science and technology, research and development, concept development and experimentation, and procurement of major weapon systems. The intent of this chapter is to provide the new administration with a menu of options that highlights some of the most important acquisition decisions it will have to make.

Chapter 12 ("Strategic Nuclear Forces and National Missile Defense: Toward an Integrated Framework") explores a complex and interconnected set of strategic issues, including strategic nuclear forces, national missile defense (NMD), and strategic arms control. It calls for a new vision to guide and integrate U.S. policy across these areas and offers several alternative offense-defense force mixes for the new administration to consider. It urges the new administration to conduct a strategic posture review early in its term to assess the implications of its strategic options not only for the U.S.-Russian relationship but also for the strategic calculus of other actors.

The broader implications of the primary strategy alternatives discussed in chapter 5 are fleshed out in chapter 13 ("Choosing among Strategy-Driven Integrated Paths: Setting the DOD Course") by examining four strategy-driven integrated paths. Each describes what a strategy would look like if fully funded, identifies tradespace candidates to reduce costs while still maintaining an acceptable level of risk consistent with the strategy in a resource-constrained environment, and highlights key indicators that should force a decision to change the level of resources devoted to defense or to change the defense strategy itself. This chapter highlights many of the most important programmatic questions that decisionmakers will have to address in the QDR and links them to strategy and to the iron triangle.

The concluding chapter ("Elements of Success for the QDR") summarizes principal findings and recommendations, reiterating the theme that the 2001 QDR will be fundamentally different from recent defense reviews: the stakes will be higher, the choices more difficult, and the level of leadership and political will required from the new administration substantial.

The Top Twelve Strategy Decisions

Twelve key decisions will define the essence of the administration's defense strategy and establish its defense priorities. What follows in this Introduction is intended to provide the new DOD leadership with some channel markers for navigating the dozen most important defense strategy decisions it will confront early in its term. These also are the principal questions that the rest of this book seeks to address.

Key Decisions for National Security Strategy

The first several decisions should be addressed not only by DOD leadership but also by the President and the new administration as part of the national security strategy (NSS) review process, which will likely be conducted concurrently with the QDR.

How should the United States define its national interests?

Any sound strategy must have as its foundation a clear conception of national interests. What is it that the United States should be seeking to protect and advance? Most strategies begin to answer this question by defining a hierarchy of national interests. The current national security strategy, for example, defines three categories of national interest: "vital," "important," and "humanitarian and other."[7] More important than the categories, however, is determining which particular interests belong in which categories. The process of doing so can go a long way toward defining administration priorities in the national security arena, but only if the administration chooses to live by the hierarchy of interests it defines. Perhaps the most compelling use of such a hierarchy is to inform decisions about the use of military force and forces: for what interests is the administration willing to put American service members in harm's way and the nation's credibility on the line?

What are the most significant threats to U.S. interests, and what are the most significant opportunities for advancing those interests?

The new administration must develop its own assessment of the near-term security environment in which it will be operating as well as the longer-term environment for which its various investment strategies (for example, weapons acquisition and personnel recruitment and training) should help the United States prepare. The challenge here will be to distill from as wide a variety of sources as possible a consensus view of the most significant challenges and opportunities the United States is likely to face over the next 25 years. At the same time, the administration should pay close attention to dissenting views that identify potential wildcards against which it may be wise to hedge: that is, low-probability but high-risk contingencies that remind us that the future might unfold in ways dramatically differently than anticipated.[8] (Such an assessment of the future security environment is offered in chapter 2.) The new administration's assessment of the future security environment also must include detailed regional assessments to identify both threats and opportunities that should be considered in U.S. national security and defense

planning. In particular, the new team should take a fresh look at any threat scenarios that will be used in force planning.[9]

What should our primary national security objectives be?

Identifying the national security objectives that should guide U.S. engagement abroad also will be critical.[10] If taken seriously, the process of setting these objectives can profoundly influence the development of interagency policies, the utilization of various instruments of national power (including the U.S. military), and the allocation of resources among and within numerous agencies of the U.S. Government. In the past, however, the development of the NSS has too often been conducted as a pro forma staff exercise to produce a Congressionally mandated public document, rather than a senior-level exercise in strategic planning. The next administration should make the NSS review a rigorous exercise to establish the new President's national security vision and priorities, one that involves the principals from all the relevant agencies and that results in clear objectives, priorities, and guidance for planning, resource allocation, and resource management among and within agencies.

Key Decisions for Defense Strategy

The next several decisions come under the umbrella of perhaps the most central question of the next QDR: *What are the strategic priorities of the U.S. military?* This question goes to the core of an administration's defense strategy and to the very question of why the United States has a military. It asks not only what the military should and should not be prepared to do in support of national security objectives, but also what priority should be given to each type of mission relative to the rest. The answer to this overarching question will be determined by how the administration answers the next six questions.

What kind of wars should the U.S. military be prepared to deter and, if necessary, fight and win over the next 10–20 years?

In both the Bottom-Up Review in 1993 and the QDR in 1997, the ability to fight and win two nearly simultaneous major theater wars (MTWs) was the highest priority mission assigned to the U.S. military. Iraqi aggression against Kuwait and Saudi Arabia and North Korean aggression against South Korea were offered as examples of the kind of large-scale, cross-border aggression for which the U.S. military should prepare. In practice, however, these two illustrative examples have become canonical cases and the focus of the vast majority of DOD planning.

Putting aside for the moment the issue of whether two MTWs is the best criterion for which to size U.S. forces, this narrow focus on two particular scenarios is problematic for several reasons. First, both scenarios are cases of aggression involving large armored invasions on land, but not every plausible MTW would take this form. One need only contemplate the possibility of Iranian aggression across the Strait of Hormuz or the defense of Taiwan against Chinese aggression to recognize that the challenges and requirements of other MTW scenarios might be vastly different from those for which U.S. forces are currently sized and shaped.[11]

Second, different MTW scenarios might involve different end-state objectives. Whereas one case might seek to restore the international border between victim and aggressor and impose a sanctions regime, another might seek to remove the aggressor from power, usher in a new regime, and help to restore stability post-conflict. The second end-state objective is a much more ambitious undertaking that would require substantially more forces and more time to execute. The differences in objectives might be dismissed as a technical point of force planning were the implications for the size and shape of the U.S. military not so profound. The ramifications for the military raise crucial questions for the Bush administration in the QDR. What are the appropriate MTW scenarios and end-state objectives for U.S. force planning?

Third, the two canonical MTW cases of Iraq and Korea do not represent the full range of challenges that the U.S. military could face in the future—even the near future. For example, more capable regional foes might employ antiaccess strategies to thwart U.S. power projection. Given the diffusion of advanced military technologies and weapons of mass destruction (WMD), an adversary might be armed with longer-range ballistic and cruise missiles, WMD, advanced integrated air defense systems, or sophisticated antiship mines and missiles by 2010, if not sooner. If these systems could delay or deny U.S. access in a distant theater of operations, the U.S. military would have to employ very different operational concepts for a rapid and decisive response to aggression, including overcoming initial limits to access and simultaneously facilitating greater access so that additional U.S. forces could be brought to bear. Such operational concepts could put a premium on combinations of capabilities different from those that have been optimized for the Iraq and Korea scenarios.

Plausible scenarios also exist involving situations other than large-scale, cross-border aggression (an MTW as currently defined) that could require a comparable level but different type of effort from the U.S. military if it

were directed to intervene. Consider these scenarios as illustrative examples: the collapse of North Korea creates a humanitarian crisis of enormous proportions; Colombia erupts in full-scale civil war between drug cartel-backed guerrillas and government forces; or the United States embarks on another coercive campaign on the scale of recent operations in Kosovo. These scenarios raise an important question for the next QDR: should the notion of major theater war be redefined? Should the most challenging category of military operations be defined by the nature of the aggression to which it responds or by the level of U.S. military effort required? The next QDR offers DOD leadership an opportunity both to clarify its terms and to broaden the set of high-end planning scenarios to capture a richer and more representative set of challenges.

We believe that the scenario set used for force planning should be broadened to include a wider range of potential warfighting cases, end-state objectives, operational constraints, and joint concepts of operation to ensure that the U.S. military is prepared for the full range of challenges it may encounter in the future. We recommend that the President and Secretary of Defense give particular attention to the issue of appropriate objectives as they determine what range of military options should be maintained and what assumptions should guide the sizing and shaping of the Armed Forces.

What are the appropriate uses of the U.S. military short of major war? How much and what kind of involvement should the U.S. military have in SSCs and in peacetime engagement activities?

Early in its tenure, the administration will need to decide which types of missions it believes to be appropriate assignments for the U.S. military and which are not appropriate. Many missions are likely to inspire little debate: warfighting, shows of force to deter aggression against American interests, noncombatant evacuations, strikes against terrorists who target U.S. citizens, forces, or territory, and support to homeland security and civil authorities. But other missions are likely to be more contentious, among them peacekeeping, peace accord implementation, humanitarian intervention and assistance, foreign disaster relief, counterdrug operations, and sanctions enforcement. Under what circumstances, if any, should these types of operations be considered appropriate missions for the U.S. military? To answer this question, the next administration will need to develop guidelines for making decisions about the employment of U.S. forces. The nature of these guidelines will depend on how the administration defines the hierarchy of U.S. national interests and U.S. national security objectives. (The

spectrum of peacetime operations and their implications for the readiness and tempo of U.S. forces is discussed in chapter 10.)

At least four issues tend to define the spectrum of opinion about the appropriate uses of the U.S. military: the nature of the global responsibilities of the United States as the sole superpower; whether there are appropriate uses of the military in situations short of vital or important interests but involving American values; when in a crisis or conflict the military should be employed; and whether and to what extent others should be expected to undertake these missions in lieu of the United States or without its leadership. One end of the spectrum is defined by the view that U.S. global responsibilities do not extend beyond national interests, that there are few appropriate uses of the U.S. military for less than vital or truly important interests, that employment of the military should be a last (or almost a last) resort, and that in many cases allies and partners should take the lead, or at least shoulder more of the burden, in lesser contingencies. This view would support a policy of more selective U.S. military involvement in SSCs, that is, the full range of military operations beyond peacetime engagement but short of major theater warfare. At the other end of the spectrum is the view that the United States has global responsibilities that extend beyond purely national interests to include hands-on stewardship of the international order and management of significant threats to international peace and stability; that there are many appropriate uses of the military to support not only national interests but also American values; that employment of the military may be needed early in a crisis to support deterrence and prevention; and that allies and partners could do more but that they require U.S. leadership and participation. This view would support a more expansive military involvement in SSCs. Where the Bush administration positions itself on this spectrum will have profound implications for how the U.S. military is employed and potentially for how it is sized and structured.

This issue also may suggest the need for some new terms and definitions. The current DOD definition of SSCs encompasses 14 different types of operations.[12] Although useful as a catchall phrase, the term "smaller-scale contingency" may blur distinctions between different types of contingency operations that will be important in establishing guidelines on the use of force. The QDR presents an opportunity to redefine terms in a way that would sharpen the guidance offered in U.S. defense strategy.

Answering the question of appropriate uses of the military also will require the Bush administration to set guidelines for the appropriate level and nature of military involvement in peacetime engagement activities—that is, the wide range of activities such as combined training, exercises, and military-to-military interactions that are designed to enhance constructive security relations and promote U.S. security interests. If used well, these activities have the potential to be a highly effective tool of American foreign policy. But they also could add significantly to the strains on the Armed Forces arising from an increased tempo of operations. Therefore, the next administration will need to set some clear guidance on this issue, determining the broad objectives for such activities, which countries should be engaged on a priority basis, and appropriate guidance for commanders in chief in developing their theater engagement plans.

What are the appropriate roles and missions for DOD in support of homeland security?

The combination of the unique position of the United States in the world, the rise of anti-American sentiment in some quarters, and the emergence of asymmetric threats that can threaten Americans at home means that the nation cannot take the security of the homeland for granted. Indeed, homeland security has moved from the wings of the defense debate to center stage in recent years. Yet the U.S. Government response to this highly complex challenge remains a work in progress. Homeland security involves a multiplicity of missions, agencies, levels of government, nongovernmental actors, and legal authorities and constraints.

The QDR offers the Bush administration an opportunity to make some progress in this area. The first challenge is to define homeland security and the associated military missions. Currently, no agreed DOD or interagency definition exists. The working group definition may offer a good starting point. We define the military dimensions of homeland security as military operations and activities to deter, prevent, defend against, and respond to attacks on the homeland. These operations and activities include NMD, territorial defense, critical infrastructure protection, counterterrorism activities, consequence management, and other activities undertaken in support of domestic civil authorities. Defining the military role in homeland security will be complicated by the fact that an unresolved tension exists between the peacetime assumption that in most areas, the Pentagon will play strictly a supporting role to civilian agencies such as the Federal Emergency Management Agency and the Federal Bureau of Investigation, and the very real possibility that in a large-scale crisis, DOD would be expected

to do much more. The second challenge is to determine the relative priority of each of these missions within the strategy. This ranking will be particularly important if the strategy is to guide contingency planning and the allocation of defense resources.

The third challenge will be to develop planning factors to address the number and types of concurrent homeland security missions the Armed Forces should be prepared to undertake and then to assess the capabilities and forces required to meet this standard. Homeland security requirements must be viewed not in isolation but in the context of other priority demands that may be placed on the U.S. military at the same time. Because the most likely time for an attack on American soil may be during or just before a major war abroad, the Bush administration will need to evaluate homeland security requirements in the context of one or more major military commitments. Otherwise, the President might be placed in the untenable position of having to choose between securing vital American interests at home and securing them abroad.

The last challenge will be to use these planning factors to assess the combined requirements of homeland security and other priority operations and to address any capability shortfalls in the current defense program. (This issue is discussed in greater detail in chapter 6.) In sum, the next QDR will offer the new administration a chance to define more clearly the DOD role in homeland security and the requirements that these missions place on U.S. forces and on the Department more broadly.

What should the objectives of military transformation be, and how urgently should they be pursued?

Military transformation, an oft-used but rarely defined term, here refers to the set of activities by which DOD attempts to harness the revolution in military affairs to make fundamental changes in technology, operational concepts and doctrine, and organizational structure. In contrast to recapitalization (the replacement of aging systems), transformation involves not only acquiring new military systems, but also modifying doctrine, organizations, training and education, matériel, leadership, and personnel policies to maximize the capabilities of future military forces. Most would agree that some form of transformation should be pursued if the U.S. military is to maintain its military superiority in the future and that the broad vision of future military operations in *Joint Vision 2020* should guide DOD transformation efforts.[13] But little consensus exists on the specific objectives that should guide transformation, the degree of urgency with which transformation should be pursued, or

what exactly will be required—in terms of investment and divestment—to transform the military. (These issues are addressed in chapter 11.) The Bush administration must address the first two issues in articulating a defense strategy and the third in programming guidance.

However the next administration chooses to define the objectives, pace, and requirements of transformation, it must also offer an explicit accounting of the associated risks. If the Bush administration pursues a policy of accelerated transformation, it will need to account for additional risk in the ability of the Armed Forces to meet near- and mid-term requirements, such as warfighting. Conversely, if the administration pursues only a modest transformation program, it will need to account for additional risk in the U.S. ability to deal with future challenges.

What should the overseas presence posture of the U.S. military be?

Four factors suggest the need for a fresh look at overseas (or forward) presence, that is, the military forces permanently stationed overseas, or rotationally or intermittently deployed there, for the purposes of influence, engagement, reassurance, deterrence, and initial crisis response. (Overseas presence issues are addressed in chapter 9.) First, the U.S. overseas presence posture is critical to deterring and responding to crises and conflicts abroad. As such, it needs to reflect the mission priorities and the regional emphases of the broader defense strategy. As a matter of principle, it should be a part of any major strategy review. Second, plausible changes in the future security environment—such as the reconciliation of North and South Korea, or a general shift southward in threat focus toward the arc of instability that extends from southern Europe and northern Africa through the Persian Gulf to south and southeast Asia[14]—may mean that U.S. forces are not optimally postured or positioned for the future. Both their locations and their capabilities merit review. In addition, the proliferation of ballistic missiles, WMD, and information and surveillance systems suggests that the manner in which U.S. forces conduct their overseas presence missions and the mix of forces involved should be closely examined. Third, recent U.S. military experiences in Southwest Asia and the Balkans have raised the issue of where long-term SSCs stop and overseas presence begins. Such situations need to be evaluated as part of any review of U.S. overseas presence posture. Finally, because of the rotational nature of much overseas posture, overseas presence requirements are a significant driver of force structure requirements for substantial parts of the U.S. military. Relatively minor changes to overseas presence requirements can have major force structure implications when the rotation base required to

meet a given demand is factored into the equation. (This particular issue is discussed in detail in chapter 6.)

What is the appropriate role of nuclear weapons? What mix of strategic offenses and defenses should be pursued?

The Bush administration will face a major strategy challenge in the interconnected areas of nuclear forces, NMD, and arms control. The fundamental issue is defining the offense-defense vision that should guide U.S. policy in these areas. What kind of nuclear posture and missile defense posture are we trying to achieve and why? Developing this vision will require the administration to return to first principles and take a fresh look at current policies and programs.[15] What is the purpose of nuclear weapons a decade after the end of the Cold War? What nuclear threats should the United States strive to reduce? Do current U.S. nuclear policy, doctrine, and posture adequately reflect the fundamentally changed relationship between the United States and Russia, our relationships with other states, and our threat reduction priorities? What role should missile defenses play vis-à-vis which countries, and what are the implications for defensive architectures?

Addressing such questions will require the new administration to develop a new and comprehensive framework for thinking about strategic offense and defense issues. (Chapter 12 seeks to provide such a framework.) Nuclear deterrence and stability must be reexamined in light of the changed relationship between the United States and Russia, the fact that other states must be factored into the U.S. strategic calculus, and the urgent need to reduce a variety of nuclear threats. This state of affairs means that the next Nuclear Posture Review must be a broad strategic review that takes a fresh and integrated look at U.S. nuclear policy, doctrine, forces, and posture, as well as NMD, arms control, and nonproliferation policies.

What roles should we expect allies and coalition partners to play across the spectrum of operations?

Imagining any future major U.S. military operation that will not involve critical support from allies and friends is difficult. Coalition operations are a fact of life today and are likely to remain so. Less certain are the exact level and nature of allied contributions across the spectrum of operations. Such contributions can be influenced by the priorities that U.S. strategy places both on relations with key allies and partners and on helping them develop stronger defense capabilities, even when their own

defense expenditures are declining. The QDR will need to address the role of allies from at least two perspectives, peacetime engagement and force planning.

A strategy that seeks to enhance the role of allies and coalition partners in future operations will need to give priority to peacetime military engagement with the forces of those countries. The key strategy challenge here is to articulate as specifically as possible the objectives and priorities for U.S. military interactions with potential allies and partners, in the form of combined training, exercises, and military-to-military exchanges.

Assumptions about allied and coalition contributions will also be crucial to QDR force planning, as they can significantly influence U.S. force requirements. An allied provision of bases and port facilities, host-nation support, or troops may reduce the requirements for Armed Forces in some operations, while in others, an allied force contribution may increase the demands on U.S. mobility, logistics, and communications assets. What operations, if any, should we expect our allies to lead, with the United States playing only a supporting role? To which U.S.-led operations should we expect allies and partners to contribute significantly, and what forms would that contribution take? Are there particular roles that we would call on allies to play in certain emergency situations, such as filling in for U.S. forces withdrawing from SSCs in the event of two concurrent major theater wars? What a strategy says about the roles of allies and partners can offer valuable context for force planners to assess the specific contributions that can be expected from allies in scenarios from major wars to SSCs. (Some of these issues are addressed in chapter 8 on force structure and capabilities.)

How should these various strategy elements be prioritized?

Once the administration has thought through the decisions above, it will need to determine where to place emphasis and where to accept or manage risk within the strategy. (A proposed methodology for assessing risk in the QDR is found in chapter 7.) It will need to be as explicit as possible about the relative priority given to each element of the strategy. This is particularly important in a resource-constrained environment in which not every element of the strategy can be provided with enough resources to reduce risk to a low level. It also is a critical step if the strategy is to provide meaningful guidance for resource allocation within DOD. (This process of prioritization is described in chapter 6.)

What strategy-based criteria should be used to size the force? What should the associated declaratory policy be?

Among the most critical tasks for any defense strategy is to set the criteria for sizing the force and to offer a public rationale for this decision. Typically, force-sizing criteria delineate the number and types of operations the U.S. military should be able to conduct concurrently. Missions or activities not explicitly cited are generally treated as lesser-included cases: things that the military may be required to do but for which additional forces are not provided. (Chapter 6 covers both a methodology for force sizing and a range of strategy-based force-sizing criteria.)

For the past 8 years, the primary criterion for sizing U.S. conventional forces has been for two nearly simultaneous MTWs, with the exception of naval forces, which are sized for forward presence. All other operations and activities are treated as lesser-included cases as far as force sizing is concerned. In practice, this has meant that U.S. conventional forces are generally dual-tasked or even triple-tasked; they are expected to remain prepared for warfighting (by training and exercising) while also being able to conduct the full range of peacetime operations, such as multiple concurrent SSCs, presence missions, and peacetime engagement activities. Indeed, current policy calls for the complete disengagement of all U.S. forces from peacetime operations and their redeployment in the event of two MTWs.

The two-MTW standard has become a focus of heated debate, making it a major issue for the next QDR. Supporters of the current policy argue that maintaining a credible two-MTW capability is central to deterring opportunistic aggressors and to ensuring that the U.S. military can defeat aggression by a more capable adversary or under circumstances that are more difficult than expected.[16] They further argue that maintaining a two-MTW force gives the U.S. military the flexibility to cope with the unpredictable and the unexpected, the depth of capability to respond effectively across the spectrum of operations, and credible combat power that translates into U.S. influence around the globe. Supporters also warn that falling off a two-MTW capability would bring into question America's standing as a global power and the credibility of its security commitments to key allies. Also at work is the desire not to let go of a known standard until convinced that there is a better alternative.

Critics argue that the two-MTW standard has become too closely linked with two particular MTW cases (Iraq and Korea) that do not capture the full range of challenges for which the U.S. military should be preparing.[17] They also contend that the two-MTW standard has lost its

credibility with key constituencies, most notably those on Capitol Hill who champion military transformation, because it is perceived as focusing the U.S. military (and the entire defense program) on known near-term challenges (fighting the last war) rather than on more significant future challenges.[18] Others have become dissatisfied with the two-MTW focus for a different reason. The last several years, they argue, have demonstrated that a force built primarily for two MTWs does not necessarily have the capabilities needed to handle the full range of other contingencies without putting undue strains on the force, as evident in the existence of low density/high demand assets and pervasive reports of overstressed units and personnel in peacetime. These critics advocate greater emphasis on sizing and shaping the force for the full range of demands placed on the U.S. military, including priority peacetime demands.

Emerging from this debate, however, is a growing consensus that the new administration must articulate in the QDR a fundamentally new rationale for the size, capabilities, and resource requirements of the U.S. military, one that changes the factor of the equation (to something other than MTWs) and that reflects the broader range of missions that U.S. forces must be prepared to perform to protect and advance American interests. The challenge here will be substantial, as the audiences for U.S. declaratory policy are many and diverse, ranging from Congress and allies abroad to potential adversaries in every region of the world. Nor are these words lost on the men and women who serve in the U.S. military; what is said in U.S. declaratory policy has a very real impact on the perceptions and morale of those who serve. Are they being deployed to missions that are recognized as legitimate? Have they been given the resources they need to live up to the stated standard? The next QDR will offer the incoming administration an opportunity to rethink both force-sizing criteria and declaratory policy and to articulate a standard that will maintain U.S. military superiority into the future while offering a more compelling and complete rationale for U.S. forces and defense expenditures. (Alternative force-sizing criteria are discussed in some detail in chapter 6.)

Conclusion

Addressing these twelve questions will be made more difficult by the compressed timelines of the QDR. The review cannot begin in earnest until the new Secretary of Defense and key members of his team are in place. Congress has mandated that the Secretary submit the QDR report to Congress no later than September 30, 2001.[19] Even without this Congressional

deadline, the new administration will have powerful incentives to conclude its review in time to shape how the services build their programs in the next budget cycle. In past reviews, this has meant trying to develop a defense strategy, size the force, and tailor the defense program to meet strategy requirements within resource constraints in 6 to 8 months. Given the more profound set of choices that the next QDR must confront if it is to be successful, the new administration may be wise to pause and reconsider the objectives and scope of the review. Rather than striving to complete a comprehensive strategy and program review, it might be wiser to conduct a truly strategic review aimed at establishing a vision, setting broad priorities, and deciding the big strategy and program issues, with a follow-on effort to conduct more in-depth analysis and refine a more comprehensive implementation plan.

Whatever the ultimate scope of the review, its compressed timeline puts a premium on advance preparation. The more work that could be done in advance to identify key issues and develop options for consideration in the next QDR, the better chance the administration has of executing a successful review. This was the motivation behind the working group, its final report, and this book.

Notes

[1] The Congressional Budget Office estimates the shortfall to be approximately $50 billion per year. U.S. Congressional Budget Office, *Budgeting for Defense: Maintaining Today's Forces* (Washington, DC: U.S. Government Printing Office, September 2000). Michael O'Hanlon of the Brookings Institution estimates the shortfall in defense spending to be between $30 billion and $50 billion per year, using fiscal year 2000 as a baseline. Some might argue that the gap is smaller because of increases in budget authority in 2001. However, using the 2001 baseline also means that the available surplus would be greatly reduced. As a result, any further increase in defense spending would come from a smaller pool of resources.

[2] See, for example, Ashton B. Carter and John P. White, eds., *Keeping the Edge: Managing Defense for the Future* (Cambridge, MA, and Stanford, CA: Harvard University and Stanford University, September 2000; MIT Press, 2001).

[3] The working group did not address all of the national security strategy issues that will provide important context to the next QDR or flesh out in detail all the programmatic and budgetary implications of the issues examined.

[4] These outside experts included M. Elaine Bunn, Roger Cliff, Richard L. Kugler, Michael E. O'Hanlon, and Christine E. Wormuth.

[5] The working group's senior advisors included Ambassador Richard L. Armitage, Barry M. Blechman, General Michael J. Dugan, USAF (Ret.), General George A. Joulwan, USA (Ret.), Admiral Charles R. Larson, USN (Ret.), Arnold L. Punaro, Lieutenant General Martin R. Steele, USMC (Ret.), and Dov S. Zakheim.

[6] For a summary of the project's findings and conclusions, see Michèle A. Flournoy, *Report of the National Defense University Quadrennial Defense Review 2001 Working Group* (Washington, DC: Institute for National Strategic Studies, National Defense University, November 2000).

[7] See *A National Security Strategy for a New Century* (Washington, DC: The White House, December 1999), 1–2. Others have defined somewhat different hierarchies. The Commission on America's National Interests, *America's National Interests* (Washington, DC: July 2000), 5–8, identified the four categories of interest as vital, extremely important, important, and less important or secondary. The U.S. Commission on National Security in the 21st Century, *Seeking a National Strategy: A Concert for Preserving Security and Promoting Freedom* (Washington, DC: April 15, 2000), 7–8, suggests three levels: survival, critical, and significant.

[8] A number of techniques have been used to assess the future security environment, including estimates, scholarly forecasts, and alternative futures scenario-building. What has been lacking in past defense reviews, however, has been a rigorous effort to combine methodologies and to distill a consensus view from myriad assessments. Additionally, only a limited effort has been made to identify dissenting views and potential wildcards. Chapter 2 seeks to remedy these deficiencies.

[9] The new administration also should consider whether the intelligence community has adequate resources and appropriate organization to support the full range of its national security requirements, but this subject is beyond the scope of this report. See, for example, Robert J. Hermann, "Keeping the Edge in Intelligence," Carter and White, *Keeping the Edge*, chapter 4.

[10] The current national security strategy articulates three core objectives (enhancing American security, bolstering U.S. economic prosperity, and promoting democracy and human rights abroad) as well as a long list of sub-objectives and tasks. See *A National Security Strategy for a New Century*, 3. Others have suggested that U.S. national security objectives should be defined somewhat differently. For example, the U.S. Commission on National Security/21st Century identified six broad objectives: to defend the United States and ensure that it is safe from the dangers of a new era; to maintain America's social cohesion, economic competitiveness, technological ingenuity, and military strength; to assist the integration of key major powers, especially China, Russia, and India, into the mainstream of the emerging international system; to promote, with others, the dynamism of the new global economy and improve the effectiveness of international institutions and international law; to adapt U.S. alliances and other regional mechanisms to a new era in which America's partners seek greater autonomy and responsibility; and to help the international community tame the disintegrative forces spawned by an era of change. See *Seeking a National Strategy*, 8–13.

[11] Indeed, the characteristics of the future security environment described in chapter 2 suggest the need for a broader range of planning scenarios.

[12] In the DOD definition, SSCs include opposed interventions, coercive campaigns, humanitarian interventions, peace accord implementations, follow-on peace operations, interpositional peacekeeping operations, foreign humanitarian assistance, domestic disaster relief and consequence management, no-fly zone enforcement, maritime intercept operations, counterdrug operations and operations in support of other agencies, noncombatant evacuation operations, shows of force, and strikes.

[13] Chairman of the Joint Chiefs of Staff, *Joint Vision 2020, America's Military: Preparing for Tomorrow* (Washington, DC: U.S. Government Printing Office, June 2000).

[14] The notion of a new "southern belt of growing strategic instability and danger" comes from Richard L. Kugler, "Controlling Chaos: U.S. National Security Strategy in a Globalizing World," *Global Forum* 1, no. 3 (Washington, DC: National Defense University, Institute for National Strategic Studies, September 2000), 35–38.

[15] Congress has mandated that a new Nuclear Posture Review be completed by December 1, 2001. See *National Defense Authorization Act for Fiscal Year 2001*, H.R. 4205, Subtitle C, Strategic Forces, Sec. 1015, "Revised Nuclear Posture Review."

[16] For a more detailed defense of the two-MTW criterion, see Secretary of Defense, *Report of the Quadrennial Defense Review* (Washington, DC: U.S. Government Printing Office, May 1997), 12–13.

[17] For a sampling of criticisms of the two-MTW standard, see the U.S. Commission on National Security/21st Century, *Seeking a National Strategy: A Concert for Preserving Security and Promoting Freedom* (April 15, 2000), 14; Andrew F. Krepinevich, Jr., *The Bottom-Up Review: An Assessment* (Washington, DC: Defense Budget Project, February 1994); Richard L. Kugler, "Replacing the 2-MTW Standard: Can A Better Approach Be Found?" *Global Forum* (Washington, DC: National Defense University, Institute for National Strategic Studies, November 2000); Michael E. O'Hanlon, "Rethinking Two War Strategies," *Joint Force Quarterly*, no. 24 (Spring 2000), 11–17; Baker Spring, Jack Spencer, and James H. Anderson, "National Defense: Restoring U.S. Military Strength" in *Issues 2000: The Candidate's Briefing Book* (Washington, DC: The Heritage Foundation, 2000); and Michael G. Vickers and Steven M. Kosiak, *The Quadrennial Defense Review—An Assessment* (Washington, DC: Center for Strategic and Budgetary Assessment, December 1997).

[18] This view was also expressed in the final report of the National Defense Panel, *Transforming Defense: National Security in the 21st Century*, 23–24.

[19] *National Defense Authorization Act for Fiscal Year 2000,* Sec. 118*, Quadrennial Defense Review*.

Chapter Two

The Future Security Environment, 2001–2025: Toward a Consensus View

by Sam J. Tangredi

Whether in business or defense, the first steps to any strategic plan include a definition of objectives and an evaluation of the environment in which those objectives will be pursued. This chapter addresses the latter requirement for the next QDR by outlining a consensus view of the future security environment for the years 2001–2025.[1] It derives this consensus through an attempt to reconcile the existing group of competing assessments of the anticipated outlines of future conflicts. Mindful of the potential for bias, it also seeks to identify dissenting viewpoints and potential wildcard events. The objective is to develop a baseline consensus of the probable future, but at the same time to identify those unpredictable catastrophic events—or predictable, yet unlikely, developments—against which hedging strategies could be adopted as a form of national defense insurance. Additionally, the intent is to identify issues about which a consensus could not be developed but which must be debated if any defense review is to be effective.

Like its 1997 predecessor, QDR 2001 is intended to be a strategy-driven assessment that balances the preparations of the present with the anticipated challenges and opportunities of the future.[2] On the surface it would appear relatively easy to construct an assessment of future trends to guide the review. A recent survey identified over 50 academic or professional "futures studies" conducted since 1989, the approximate end of the Cold War.[3] But there are problems in attempting to apply the results of these studies to effective policymaking, among them their lack of coordination, the significant differences in their methodologies and the time periods examined, the broad and divergent scope of topics, the presence of underlying and often unidentified biases, and the wide range of contradictory results. Many of

the individual studies were constructed from a clean slate, taking scant account of previous related work. An unedited compilation of these studies would be capable of generating much debate, but would provide only a limited basis for policymaking.

To construct a policy requires a baseline consensus from which implications and issues can be examined and analyzed. The methodology developed by the working group and reported in this chapter is straightforward. Thirty-six studies (unclassified or with pertinent unclassified sections) concerning the future security environment were selected based on standardized criteria.[4] These studies were representative of views from a wide range of organizations involved with or interested in national defense issues. The studies, with two exceptions, were published between 1996 and 2000. The choice of which studies to include here was based on the assumption that earlier themes would have been reflected in QDR 1997. These studies are identified in the appendix to this chapter.

The 36 studies were analyzed in detail and compared on a subject-by-subject basis. Sixteen points of consensus and nine points of divergence were identified and are reported in this chapter. The points of consensus are those on which 85 percent or more of the sources agreed. Points of divergence are those on which there was no clear majority position.

The consensus and divergence points were compared with the conclusions of over 300 other sources, most of them specialized studies of the specific topics.[5] The purpose was to identify dissenting positions on the points of consensus, as well to validate the fact that the consensus represents a majority view.

Both the primary and consulted sources were also surveyed for the identification of wildcards: events that could not normally be predicted, but that could present a considerable challenge if they were to occur during the 2001–2025 time period. Along with the divergence points, the wildcards indicate changes in the security environment that might require the development of hedging strategies.

The result was a consensus scenario that describes the anticipated 2001–2025 future security environment, presented below in narrative form, along with a list of potential unanticipated events that merit hedging.

Estimates, Forecasts, Scenarios, and Caveats

There are limitations, both conceptual and practical, in providing a consensus view of the future. First is the difficulty in comparing a mixture of assessments that use differing techniques. Three distinct methodologies are currently in favor for use in assessing the future security environment.

Estimates utilize an assessment of current conditions to identify possible future events. The priority is accuracy, which requires a relatively short time horizon. *Forecasts* represent longer-range assessments, primarily relying on trends-based analysis. Most forecasts are issue-specific. *Scenarios* can be thought of as a range of forecasts, which tend to be richly developed depictions of alternate worlds based on plausible changes in current trends.

The strengths and weaknesses of the three primary methodologies for futures assessment have implications for policy recommendations.[6] But the most important is the understanding that any attempt at deriving a consensus view requires the mixing of methodologies that were not necessarily designed to be compatible.

Moreover, while an assessment of the future security environment is the essential starting point for all strategic planning, history cautions against both its inappropriate use and a belief in a high degree of certainty.[7] Other factors also justify caution, including the problems of normative assessments, institutional bias, emotional reaction of individuals, and feedback effects, or the effects of taking action.[8] Futures assessments, even those that are based on linear trends in political events or the development of technology, inherently carry the biases of the assessors. Institutions and organizations, such as individuals, also have inherent biases. Such biases do not have to be products of deliberate distortion, but can evolve from seeing the world from a particular viewpoint. Within the Department of Defense, for example, each service has a unique culture evolved from its historical experience and the particular mediums in which it operates and through which past, present, and future are perceived.

Perhaps the most significant difficulty in developing futures assessments and translating them into policies and actions is the fact that all actions taken have the inherent effect of changing the future. By carrying out a plan, the conditions that inspired the plan are changed. The "feedback" dynamics of such change increase through the unfolding of competing actions, such as the plans of an enemy or its counterthrusts.

The limitations of futures analysis and the historical cautions concerning its use mean that the acceptance of any assessment entails risk. While, as a starting point for defense planning, the assessment of the future security environment is essential, it cannot guarantee the success of any policy based on its premises. Compiling a comparative assessment from a balanced mix of representative sources thus appeared to the NDU Working Group to be the best method of mitigating this risk.

Aspects of an Anticipated Future: Common Assessments and Consensus Predictions

The comparative analysis generated by the survey of the 36 identified studies identified 16 propositions that represent a general consensus of the sources. These propositions reflect a common assessment of the future security environment and mark the boundaries of the most likely future events. All of the propositions concern the time period 2001–2025. They can be divided into three broad categories: consensus concerning potential *threats*, consensus concerning *military technology*, and consensus concerning *opposing strategies*.

Such a "derived consensus" does not represent absolute agreement by the majority of sources, nor does it represent complete agreement with

Table 2–1. Common Assessments, 2001–2025

Threats:

1. There will not be a rival ideology.
2. There will not be a rival military coalition.
3. There will not be a global military peer competitor.
4. There will be economic competitors, but this competition will not lead to war.
5. There will be regional powers that will challenge the United States militarily (but there is disagreement on who—China, Russia, rogue states?).
6. There will be more failing states.
7. There will be more nonstate threats to security.

Military technology:

8. Advanced military technology will become more diffuse.
9. Significant operational intelligence will become commercially available.
10. Other nations will pursue a revolution in military affairs, but the United States will retain the overall lead in technology.
11. If there is a technological surprise innovation, it is likely to be developed by the United States or one of its allies.

Opposing strategies:

12. The United States will retain control of the seas and air.
13. Regional powers will use antiaccess and area denial strategies.
14. Large-scale combat involving U.S. forces is likely to include the use of WMD.
15. The homeland of the United States will become increasingly vulnerable to asymmetric attacks.
16. Information warfare will become increasingly important.

any proposition by any particular source. It is meant to be a starting point from which choices about appropriate future strategies, policies, and force structure can be developed.

Almost every consensus point has a corresponding dissenting or contrary view. In the process of translating the implications of future assessment into policy recommendations, the contrary views deserve consideration, both as cautions against precipitous policy recommendations and also as indicators of potential events against which a prudent strategy should attempt to hedge. Therefore, the following discussions identify both the details of the consensus view and the arguments of prominent dissenters.[9]

1. There will not be an ideological competitor to democracy on the scale of Cold War communism.

The propellant of the Cold War was the ideological struggle between democracy and communism as embodied in the United States and Soviet Union. With the dramatic victory of the West, ideology as an element of history did not end, but the rivalry between democratic capitalism and communism did end, at least for the foreseeable future.

The majority of future security-environment studies—both governmental and private—do not identify any other ideologies with global appeal, and thus do not foresee a competing ideology before at least 2025.[10] The expansion of democratic values appears to be a by-product of globalization.[11] This does not mean that there will not be authoritarian nations claiming to be democracies, when in fact their political structure falls far short. However—with one significant dissenter discussed below—the consensus remains that the future will be one of an evolutionary increase in democratic states.[12] But the consensus view does include room for potential public discouragement and disillusionment in democracy and market capitalism.[13]

Although not professing to be a direct forecast of the future security environment, the thesis advanced by Samuel Huntington is that there are cultural challenges to Western-style democracy.[14] His view is that cultural identity plays a significant role in global politics and that there are natural frictions between the ethnic civilizations of our multipolar, multicivilizational world. In particular, he identifies the Islamic culture, with its traditional linkage between religious and political authority, as posing the greatest potential challenge to Americanized democratic liberalism by threatening a clash of civilizations.[15]

2. There will not be a rival coalition of states to challenge the United States militarily.

The consensus view is that economic and political globalization makes it unlikely that a rival coalition could form to challenge the United States militarily. Various nations may express their displeasure at particular U.S. foreign policies or the overall specter of American cultural imperialism, but most would have much to lose and little to gain in an anti-U.S. alliance.[16] There have been no credible forecasts that the European Union (EU) interest in developing a unified military force independent from the North Atlantic Treaty Organization (NATO) will lead to a potential military confrontation with the United States.[17]

Supporters of the view that a rival coalition is unlikely argue that the desire of lesser-developed nations, as well as Russia and China, to join the "first tier" mitigates anti-Western hostility. The closer both nations are economically tied to the West, the consensus view argues, the less likely that an anti-U.S. coalition will be formed.

However, a representative dissenting view postulates a loose rival coalition driven by "an increasingly more assertive China aligned with a much weaker, authoritarian Russia."[18] The primary driver would be U.S. action to deter a Chinese naval blockade of Taiwan in the 2010 timeframe.[19] The argument is that "while to some extent a worst-case scenario [and "the least likely to develop by 2025"], the potential for both Japan and Europe to turn inward and leave the United States alone to face a major challenge from China and other states is plausible and, as a parameter for future planning, must be considered."[20]

Although this is an unlikely scenario, there has been evidence of a desire on the part of the Russian leadership for a symbolic rapprochement with China as a way of countering "global domination by the United States," especially U.S. criticism of Russian military actions in Chechnya.[21] Russia also sought, in late 1999, to recharge its diplomatic relations with the so-called rogue states.[22] Likewise, there have been suggestions that China would seek to put together alliances that "can defuse hegemonism by the U.S."[23]

3. There will be no conventional military peer competitor capable of sustained, long-term power projection beyond its immediate region.

To define peer competitor, one must ask what the military forces of the United States can do that those of other nations cannot. The succinct answer is that the United States is capable of projecting its military

power on a global basis in a sustained fashion by means of its unparalleled logistics capabilities, including airlift, sealift, an extensive series of alliances, and expeditionary forces. Other nations can do so only to a limited extent.[24]

Whether *military peer competitor* is defined in terms of a "Soviet Union–equivalent" or by the capacity to sustain global power projection, the consensus view is that such a peer competitor cannot develop prior to 2025. It is not simply a question of pursuing the development of power-projection capabilities; rather, 25 years appear insufficient to duplicate the unique U.S. logistics and alliance networks.

However, the QDR 1997 report held out the possibility of the emergence of a "regional great power or global peer competitor," with Russia and China "seen by some as having the potential to be such competitors, though their respective futures are quite uncertain."[25]

Additionally, a Russia-China-led alliance could pose the possibility of simultaneous conflicts in multiple regions, which would severely tax the ability of U.S. forces to respond. This would be the closest equivalent to a global peer competitor, but it would still not match U.S. power-projection capabilities.

4. Economic competitors will challenge U.S. domination of the international economic system, but this will not lead to war.

Propelled by the perception of increasing trade competition between the United States and Japan, the 1990s saw a series of publications suggesting the potential for military conflicts based on economic rivalry. Although the particular controversy was effectively smothered—at least for the time being—by the Asian economic downturn of the late 1990s, the view of a linkage between economic conflict and war has remained. A staple of Marxist theology and post-First World War assessments, it resurfaced in the view that the Gulf War was all about oil. The potential for China to become an economic power, along with the evolving EU, have also been cited as precursors to politico-military confrontation with the United States.[26]

Despite popular concerns, the consensus remains that economic competition need not lead to military confrontation and that it is very unlikely to do so in the 2001–2025 period. The particulars of U.S.-Japanese economic conflict are largely seen as reconcilable differences that will not affect security arrangements.[27] The prevailing view of the phenomenon of globalization is that such greater economic interconnection decreases, rather than increases, the potential for military conflict.[28]

One diverging view, however, holds a contrary view of the conflictual nature of globalization and global prosperity:

> Paradoxically, increased prosperity and integration tends to increase political instability. Prosperity leads to greater economic integration and dependency resulting in greater insecurity by increasing the importance of international economic relationships and therefore increasing the opportunities for friction. This, in turn, leads to greater insecurity.[29]

5. Regional powers may challenge the United States militarily.

The threat that regional powers will challenge the United States militarily and seek to prevent the United States from projecting power into their regions is universally considered the primary challenge that U.S. foreign and defense policy will face in the first decades of the 21st century. *Regional dangers* is the term used over and over again to describe the potential for "the threat of coercion and large-scale, cross-border aggression against U.S. allies and friends in key regions by hostile states with significant military power."[30] There is, however, disagreement over which power will pose such a challenge.

Initially, the first prime regional threat was thought to be the unpredictable actions (or collapse) of North Korea, the world's last true Stalinist state. The second was the actions of Saddam Hussein in Iraq, or the simmering hostility of Iran towards its Arabian Gulf neighbors and the West.[31]

However, these two MTWs do not necessarily represent the most demanding future threats. Nations that can sustain sophisticated defense industries and produce significant quantities of relatively modern weaponry and that have access to a large pool of trainable manpower would be the most formidable foes. From that perspective, there is clearly a rank order of potential (and current) regional military powers. Within this order, almost every futures assessment identifies Russia and China as having the greatest potential for regional dominance.[32]

Several additional *rogue states,* such as Iraq, Iran, or Libya, have the potential of becoming military powers in their region, particularly through the acquisition of WMD.[33] Rogue state scenarios are considered the basis for two–MTW planning. Rogue states might also seek to use terrorism or other deniable means, rather than confront the United States directly.

One or more of the rogue states (North Korea, Iraq, Iran, Libya, and Syria) might seek to challenge the United States militarily in the near term. Such an assessment is based on current hostilities, plans or desire for regional dominance, propensity for aggressive military action, or a pattern of anti-U.S. military activity. In a longer-term view, the potential

for conflict with a major regional power may grow, with Russia or China as the most difficult potential military opponents. However, there is no consensus as to which regional power or rogue state is likely to take action at any particular time.

In the sources surveyed, there are no significant arguments that a regional conflict is unlikely prior to 2025. There is, however, a perception that effective U.S. actions, along with a well-trained and technologically superior military, could deter such conflict. Likewise, astute management of relations with Russia, China, and India may prevent the development of actual hostilities.[34] Some sources argue that hostile states are simply too weak to mount a credible military threat to the overwhelming power of the Armed Forces.[35] However, a pessimistic view of the constant potential for regional conflict is widespread.

6. There will be more failing states, but U.S. involvement will remain discretionary.

The terms *failed states* or *failing states* have been increasingly used to describe nations that cannot provide law, order, or basic human necessities to their population. Such states may be wracked by civil war, ideological or ethnic hatreds, or other conflicts that prevent the central government from providing internal security or promoting general welfare.

While the internal consequences of such disorder have long been recognized, the external effects within the international environment have not always been considered a security threat to distant, stable nations. The question of exactly where the United States has vital or important interests fuels the argument that American efforts to restore order in failed states are largely a humanitarian effort that has little positive impact on U.S. national security. However, there are still compelling arguments for American intervention to stop genocide or massive loss of life.[36] Such arguments contributed to the American decision to prompt NATO intervention in Kosovo. But given the nature of democratic politics, such intervention ultimately remains discretionary.

Few if any sources are willing to predict categorically a future security environment in which significant numbers of failed states do *not* occur.[37] There are, however, optimistic scenarios that are envisioned, even in the case of Africa.[38] While some sources suggest an increase in the desire to take action to stem such conflict, others point to an increasing reluctance on the part of most nations to become involved.[39] Additionally, arguments have been made that advocates of intervention underestimate the complexity of involvement and that such involvement is often counterproductive.[40]

7. There will be more nonstate threats to security, but they will increase gradually, not dramatically.

The term *nonstate threats* is used to denote those threats to national security that are not directly planned or organized by a nation-state. Today, foremost among these threats are acts of terrorism other than those sponsored by a rogue state. A loosely defined spectrum of nonstate threats includes humanitarian disasters, mass migrations, piracy, computer network attack, organized international crime and drug trafficking, terrorism with conventional weaponry, and terrorism with WMD. Nonstate actors include international organizations, nongovernmental organizations (NGOs), multinational corporations, and multinational interest groups.

Alarmist predictions that nonstate actors, issues, and threats would overwhelm and break the abilities of most nation-states to deal with them have not materialized.[41] Nations that have collapsed into anarchy have largely been victims of civil wars, a phenomenon that long preceded the current definition of nonstate threats. Many of these civil wars have been fueled or supported by foreign parties, international actors, or other nations. To that extent, nonstate or transnational threats do contribute to such internal collapse, but in ways that are not unprecedented historically.

The consensus of the sources is that nonstate threats will increase in number and intensity in the future. However, this anticipated increase parallels vulnerabilities that are by-products of the evolutionary process of globalization. Nonstate threats may seem more potent due to the advantages modern technologies may bring to the perpetrator. However, the same or other modern technologies can be used to strengthen defenses. But this does not solve the near-term problems of terrorism, particularly if terrorist groups come into possession of WMD. The consensus view is of concern about the near-term potential for terrorist incidents, but the level of current and future vulnerability of societies to terrorism is still hotly debated.[42]

No sources maintain that nonstate threats will not increase in the 2001–2025 timeframe. However, some sources do view the rise of these threats as exponential rather than gradual, with more alarm than the consensus view might imply. Of particular concern is the possibility of terrorism with WMD, also known as *catastrophic terrorism*.[43]

8. Advanced military technology will become more diffuse.

The category of advanced military technology constitutes a spectrum of technologies or innovative uses of technology developed during the

last few decades: from emerging biological weaponry and other WMD, to new forms of nonlethal weapons, including information operations using mass media.[44] It includes highly accurate ballistic and cruise missiles; fourth-generation combat aircraft; complex surveillance, detection, tracking, and targeting equipment; surface-to-air missiles; nuclear powered submarines; and other relatively high-cost systems.

The consensus of the sources is that advanced military technology will continue to be diffused through sales, modification of dual-use systems, and indigenous weapons development programs. Although international export control regimes may exist for certain types of advanced weapons, these agreements appear to be easily circumvented. Iran, Iraq, North Korea, Pakistan, and India have all effectively foiled the efforts of the Missile Technology Control Regime.[45] Control regimes appear to have slowed potential nuclear weapons development by rogue states, but there appear to be other covert proliferation efforts.

Although there are sources that endorse greater efforts to negotiate and strengthen weapons control regimes, none argue that military technology will not continue to become more diffuse in the 2001–2025 period. In fact, it is the rate at which military technologies are spreading that prompts the more urgent calls for international controls. Under current circumstances, proliferation of advanced systems appears to be simply a matter of time and resources.

9. Significant operational intelligence will become commercially available.

Given the current trends in space launch and commercialization, the consensus is that operational intelligence—primarily satellite imagery—will become more and more commercially available. Yet the consensus is that the United States will "maintain a preponderant edge, using its technical systems to produce timely and usable information."[46] The infrastructure necessary is simply too difficult to create except through the obvious expenditure of considerable resources. The consensus viewpoint concerning militarily significant commercial information is that although it might be available to a potential aggressor until the commencement of hostilities, it would be voluntarily or covertly shut down upon the initial attack. But the fact that operational intelligence would not remain available during conflict may be of little consolation, since the information obtained before hostilities would be sufficient to target fixed sites, such as land bases, in advance. The use of WMD might also make the need for real-time targeting information moot.

None of the sources surveyed suggested that operational intelligence will not become commercially available in the 2001–2025 timeframe. Opposition to the consensus view revolved around two points: that satellite information is largely irrelevant to the most likely threats the U.S. military will face, such as Third World anarchy and small-scale guerrilla warfare, and that a cut-off of commercial imagery during hostilities cannot be presumed.[47]

10. Other nations will pursue a revolution in military affairs (RMA), but the United States will retain the overall technological lead.

A number of advances in military technology are frequently cited as evidence that an RMA is under way, and even skeptics concede that these advances have had a tremendous effect on warfighting.[48] Advances in information processing and command and control are cited most frequently, with predictions of increasing availability of real-time information at the command level. Some proponents claim that new intelligence, surveillance, and reconnaissance (ISR) technology and battle management systems can dispel the fog of war that has previously prevented commanders from having a thoroughly accurate picture of the battlefield.[49]

Also frequently linked to the RMA are precision weapons. Other technological advances, from biological weapons to miniaturized "nano-systems," are also frequently seen as pushing modern warfare away from the bloody killing fields of ground combat.

Critics concede that the advances in military technology have greatly increased the striking power of modern militaries. However, they argue that such advances have not changed the fundamental concept of warfare and that victory ultimately requires closing with the enemy and occupying territories or destroying centers of gravity.[50]

Potential opponents may pursue an RMA through the development of advanced weaponry, but—barring a catastrophic economic disaster in the West—they cannot surpass the overall U.S. lead in advanced military technologies during the 2001–2025 timeframe.[51] Certain niche technologies, such as advances in chemical and biological warfare or the development of miniaturized nano-weapons that would be easier to transport and deploy in space or on earth, could provide a temporary technological lead in specific areas.[52] Developing such a niche could give a state with limited resources more bang for its buck, but such a development would be unlikely to make the entire U.S. arsenal obsolete, or completely paralyze decisionmaking. At the same time, the overall technological lead

by the United States would facilitate the development of defenses against these advantages, or at least methods of mitigating the threat.

While conceding America's current overall lead in military technology, several sources point to alarming trends. The Nation is not producing enough engineers and scientists to maintain the knowledge capital to retain the overall technological lead.[53] Worse, from this perspective, the American education system is loyal to potential opponents.[54] Eventually other countries could take technological leadership.

Other sources argue that the United States is not taking the RMA seriously enough and is squandering its technological lead.[55] In this view, DOD continues to spend money on so-called legacy systems, while underfunding both basic and advanced research and development and experimentation. This combination could give opponents an opportunity to leapfrog over the capabilities of the formidable U.S. arsenal and to make its overall technological superiority moot.[56]

11. If there is a technological surprise, it is likely to be developed by the United States or one of its allies.

A consensus of the sources examined views a truly unanticipated development in military technology as unlikely in the 2001–2025 period. But if one were to occur, the consensus view holds that it would most likely be the product of a Western or developed nation, not a nation hostile to the United States. If a technological surprise were to occur in a hostile state, it is likely that it could be quickly replicated somewhere in the West. Infrastructure, knowledge base, and commercial incentive appear to be the drivers of new, surprising innovations, and these are centered in the democratic capitalist states.[57]

Among those assessments of the future security environment that identify potential wildcards, a major technological surprise was listed as an occurrence of potential concern.[58]

12. The United States will retain control of the seas and air.

The consensus is that the size and level of operational experience of the Navy and Air Force make it nearly impossible for potential opponents to mount a serious challenge in the waters and in the air space over the world's oceans.[59] This is likely to continue until 2025. Even if potential opponents are not deterred from direct competition against these American strengths, it would take at least 20 years for any competitor to build to the numbers and sophistication of the naval and air fleets. That is not to say that an opponent would not seek to contest sea and air control in its own

region, or even individual force-on-force engagements outside its region. However, the investment needed to challenge the United States on a global basis in areas that the Nation has long maintained operational advantages is staggering.[60]

No source suggests that U.S. naval and air assets could be decisively defeated, and particularly not within the global commons in the 2001–2025 period. However, concerns are frequently expressed that the United States could become complacent with its current margin of superiority and elect not to replace aging systems with more technologically advanced first-line platforms. Over a long term, the cumulative effect of a procurement holiday might make the bulk of U.S. naval and air forces obsolete.[61] The concept of block obsolescence for legacy systems also appears in the arguments of proponents of transformation. Critics of American complacency also point to the continuing development of high-technology weaponry for export by technologically advanced nations.

Some also argue that general American dominance of sea and air is largely irrelevant in dealing with the more likely future threats of terrorism, chemical, biological, and information warfare, and failing states, as well as against the prepared antiaccess or area denial strategies of regional opponents.[62]

13. Regional powers will use antiaccess and area denial strategies.

The potential use of antiaccess or area denial strategies against American power-projection capabilities has been a focal point of research by the Office of Net Assessment within the Office of the Secretary of Defense since at least the mid-1990s.[63] Originally these studies had a maritime focus. In the logic of the antiaccess approach, a potential opponent would not seek to engage the Navy at sea, where the United States holds absolute dominance. Rather, it would seek to prevent U.S. maritime forces from entering its littoral waters by massive attrition attacks using asymmetric weapons, such as WMD.[64] However, these studies were soon expanded to include examination of all U.S. overseas presence and power projection forces.

The obvious first step in such an area denial effort would be to neutralize any existing lodgment that the Armed Forces already have within the region by destroying U.S. forward-presence forces while simultaneously attacking the regional infrastructure for follow-on power projection forces. Another step would be to attack the ports and airfields for the embarkation of forces in the continental United States (CONUS). However, that is generally outside of the anticipated conventional capabilities of

most regional powers.[65] Additionally, a strike against the U.S. homeland could strengthen rather than discourage national resolve.[66]

With regional land bases destroyed and maritime access denied, the potential regional opponent would have effectively extended its defenses out to the entry points of its region. The United States will find itself in the position of having to undertake potentially costly forcible entry operations. Even in this war of attrition, it is likely that the United States would eventually breach the antiaccess defenses, particularly through the use of standoff weapons stationed outside the region or in CONUS. However, the real goal of an antiaccess strategy is to convince the United States or its allies and coalition partners that the cost of penetration is simply too high.[67]

The consensus of sources surveyed is that antiaccess or area denial is the most likely campaign plan for an opponent of the United States to adopt, and thus the likely opposition that strategic U.S. power projection forces would face in an MTW. This conclusion is based not only on the proliferation of ballistic missiles and other weapons, including WMD, but also on the underlying logic of the strategy itself.[68]

None of the sources surveyed maintain that it is unlikely that a potential opponent would adopt an antiaccess strategy in order to prevent the United States from intervening to stop regional cross-border aggression. If such an MTW were to occur, an antiaccess strategy would appear the best—perhaps only—method to blunt U.S. power-projection strength. However, a number of sources see the occurrence of cross-border aggression and MTW as much less likely than the chaos of failed states and internal civil strife.

Perceptions also differ concerning the actual ability of regional aggressors to carry out regional closure in the 2001–2025 timeframe.[69] Several sources suggest that, before 2025, most potential opponents will be unable to use ballistic missiles effectively against moving targets, leaving U.S. air and naval forces free to attack the weak points of an antiaccess campaign.[70] Other sources suggest that the ability of rogue states to coerce potential allies into denying American access to their territory has been overstated.[71]

14. Large-scale combat involving U.S. forces is likely to include the use of WMD.

The desires of certain states for WMD arsenals, the rate of actual proliferation, a seemingly growing disregard of the laws of armed conflict, and the lessons of the Gulf War suggest a potential for integration of WMD into military operations.[72] Most sources assume that proliferation

will continue in the 2001–2025 timeframe and that many of the international control regimes seeking to prevent the spread of WMD will break down or will be ignored. Terrorist groups also appear interested in purchasing or developing WMD. Underlying technologies, particularly dual-use systems such as nuclear reactors that could enrich uranium as well as generate power, are becoming available to potential aggressors and provide cover for weapons development. Humanitarian NGOs report that the laws of war appear increasingly to be disregarded, with less and less discrimination between attacking military forces and civilian noncombatants. Tyrannical regimes facing potential removal by outside forces—such as those of the United States or a U.S.-led coalition—appear increasingly tempted to use WMD in combat.

The majority of the sources surveyed view the likelihood of use of WMD during large-scale conflict in the 2001–2025 period as quite high. The consensus is that use of chemical or biological weapons would be more likely than nuclear war. Many sources view WMD use as the primary future threat to American security. There seems to be agreement that, if certain rogue states have WMD, they would be used for the survival of tyrannical regimes.

The potential of WMD in the hands of terrorist groups is considered a more frightening situation by many sources. Terrorist attacks could be directed against vulnerable civilian populations as well as military forces.

There is a perception, however, that use of WMD against the United States in conflict can be deterred.[73] The rate of increase in nuclear arsenals during 2001–2025 does not suggest that more than perhaps two or three states, if any, could threaten the United States with mutual destruction. Because chemical and biological weapons are routinely categorized along with nuclear weapons as WMD, there is, by definition, ambiguity as to whether use of chemical or biological weapons would provoke a U.S. nuclear retaliation. Thus, the use of WMD against forces in large-scale armed conflict with the United States might be deterred by the U.S. nuclear arsenal.

Sources that view chemical and biological weapons as the significant threats of the 2001–2025 period do not necessarily dispute the deterrent effect of the U.S. nuclear arsenal, or even the deterrent effect of conventional power-projection forces. Rather, they argue that it is possible to use WMD on American soil or against U.S. forces in a manner that could render the source of the attack unidentifiable.[74] If they could make it appear to be a terrorist attack, potential state opponents might

believe that they could successfully attack the United States without retribution.[75] They might use ostensibly unsponsored terrorist groups as proxies in a WMD attack designed to paralyze American response to far-off regional aggression.

Other sources argue that technology (and the American psyche) will inevitably render such attacks attributable, mitigating the attractiveness of such a reckless course of action. An additional deterrent might be U.S. theater ballistic missile defenses. If positioned in theater prior to the actual outbreak of conflict, such defenses might deter WMD use in the initial stages, or perhaps deter the entire conflict itself.

It has also been suggested that a U.S. declaratory counterproliferation policy of pursuing regime change in the event of WMD use, or threats of use, would also have considerable deterrent effect. If the likely end result of any WMD confrontation with the United States or ally would be the decapitation of the aggressor, rogue states might reconsider any potential tactical advantages of WMD use.[76]

15. The U.S. homeland will become increasingly vulnerable to asymmetric attacks.

The perception that the U.S. homeland will become increasingly vulnerable in the 2001–2025 period can be traced to the National Defense Panel report of 1997. It has subsequently become an almost universal forecast. In 1999, the U.S. Commission on National Security/21st Century echoed the prevailing perception that "America will become increasingly vulnerable to hostile attack on our homeland, and our military superiority will not entirely protect us."[77]

With the end of the Cold War and the agreed de-alerting of nuclear forces, along with reductions in overall U.S. and Russia nuclear arsenals, it would appear that the American populace is much less directly vulnerable than they have been in at least 30 years. However, others point to the balance of terror that made a nuclear war between the United States and Soviet Union irrational. Rogue states, they argue, are less likely to be deterred from making asymmetric attacks on the U.S. homeland in the event of a conflict.[78] Indeed, asymmetric attacks may be the most useful—and perhaps only—military tool in the hands of potential opponents.[79]

The consensus is that the U.S. homeland will become more vulnerable to new threats, particularly chemical and biological weapons in the hands of rogue states and terrorist groups.[80] The ability to transport such weapons in small packages that can easily be smuggled is often cited as a contributing factor. In addition, rogue regimes such as in North Korea are

attempting to develop ballistic missiles capable of reaching the continental United States. States that do not possess fissile material could opt for chemical or biological warheads.

Realization that the forward-defense posture allows for only limited defense of the U.S. coastline and airspace has increased.[81] At the same time, the Internet and the ubiquitous nature of computer control seem to have made the American infrastructure more vulnerable to information warfare. Computer network defenses are possible, but at both financial and social costs.

The consensus position differs from more alarming forecasts on questions of the degree of future vulnerability. The majority view is that the increase in such threats is evolutionary, rather than exponential. As use of the Internet continues to penetrate society, the vulnerability to disruption increases, but so will redundant and protected systems. As globalization causes a rise in transnational or nonstate threats, such as massive migrations, its economic benefits may mitigate such threats. Meanwhile, the United States appears to be taking steps to deal with the potential for catastrophic terrorism and infrastructure attack.[82]

Several sources suggest that the rate of development of future threats—fueled primarily by the malicious use of new technologies—is indeed increasing dramatically. From this perspective, increasing homeland vulnerability is inevitable, particularly if active defenses, interagency cooperation efforts, redundancy, and reconstitution do not receive substantial funding increases within the U.S. defense budget.

16. Information warfare will become increasingly important.

Information warfare refers both to the use of various measures to attack the information technology (IT) systems on which a military opponent may depend and to the control and manipulation of the information available to the civilian populace of an opposing state.[83] Computer network attack might be aimed at systems providing the ISR or command and control capabilities necessary for modern, high-technology warfare, or it might be an asymmetric strike on the civilian infrastructure of the opponent's homeland. Additionally, an IT-based public relations war could have a less lethal and more indirect effect on the populace than computer infrastructure attack, but as seen in the Vietnam War experience, it could have a more direct effect on the government's willingness to prosecute a war.[84]

The U.S. government has recently addressed computer network defense and critical infrastructure protection, but in the face of an emerging

and somewhat indistinct threat, defense necessarily lags offense.[85] An aspect of concern to some is the potential anonymity of attack and the possible use of information warfare by nonstate actors, particularly terrorist groups. Hackers and terrorists could use multiple paths of entry to disguise their identities and intentions.[86] Although it is possible to trace these paths to a source, such efforts take time and resources.[87] The question remains whether a hostile state could mask an information attack to such an extent that the United States would be unable to determine the source in order to take timely defensive or retaliatory actions.

In classical military terms, the use of information is an attempt to lift the fog of war that envelops the battlefield. Commanders have always tried to acquire accurate information; what is different is that modern IT appears to provide a greater opportunity to clear away the fog than ever before. Thus, it is natural for U.S. forces to strive for "information dominance" or "knowledge superiority" in any conflict.[88] The fact that there are more tools to make more information available suggests that information has become more important to victory.[89] This also implies that deception, disinformation, and the use of mass media are also of increasing value as military tools.

The consensus of sources is that information is increasing in importance as IT increases in reach and capacity. But the growing dependence on precise information for combat operations also creates greater opportunities for deception. Technologically superior armies, like open societies, appear more vulnerable to denial and deception than less interconnected forces or closed societies.

While there is no overt disagreement with the proposition that information will be a critical element in future warfare, there is disagreement over the extent to which information—and, by extension, information warfare—will be the dominant element.

An opposing viewpoint is that modern IT does ensure that the fog of war can be lifted and suggests that the U.S. military must be radically transformed in order to optimize its capabilities in an information warfare-dominant future.[90]

Divergence and Contradictions

The 16 points of consensus form a baseline from which an effective debate on defense planning priorities, during QDR 2001 or any other defense review, could proceed. Likely issues of such a debate can be identified from the diverging views and contradictions among the 36 surveyed

sources. These alternative assessments of the future are presented here as *either-or* statements, but there are varying degrees of agreement, and the *either-or* statements generally represent the extreme ends of the range.

Table 2–2. Divergence and Contradictions

Nature of conflict:
1. A. It is unlikely that two MTWs would happen simultaneously. ***or*** B. Two nearly simultaneous MTWs will remain a possibility.
2. A. Future wars will be more brutal with more civilian casualties. ***or*** B. Information operations and precision weapons will make warfare less deadly.
3. A. Chaos in littorals or panic in the city are more likely contingencies than MTW. ***or*** B. MTW will remain the primary threat to security.
4. A. Space will be a theater of conflict. ***or*** B. Space will remain a conduit of information, but not a combat theater.
Threats:
5. A. A near-peer competitor is inevitable over the long term; we need to prepare now. ***or*** B. Preparing for a near-peer will create a military competition (thus creating a near-peer).
6. A. Overseas bases will be essentially indefensible. ***or*** B. Future capabilities will be able to defend overseas bases.
Opposing Strategies:
7. A. Current (legacy) U.S. forces will not be able to overcome antiaccess strategies except at high cost. ***or*** B. Techniques of deception or denial of information will remain effective in allowing legacy systems to penetrate future antiaccess efforts.
8. A. Nuclear deterrence will remain a vital aspect of security. ***or*** B. Nuclear deterrence will have an increasingly smaller role in future security.
9. A. Conventional military force will not deter terrorism or nonstate threats. ***or*** B. U.S. military capabilities will retain considerable deterrent or coercive effects against terrorism and nonstate threats.

For the purpose of defense planning, identification of contending predictions about the future security environment is the prelude for making deliberate choices on how to prepare for and perhaps to hedge against an analytically uncertain future.

1. (A) It is unlikely that two MTWs would happen simultaneously.
or
(B) Two nearly simultaneous MTWs will remain a possibility.

A number of critical assessments—some of which are linked to a recommended strategy or force structure different from the current posture—discount the possibility of two MTWs occurring nearly simultaneously. Preparing for two such overlapping contingencies is dismissed as unsupportable worst-case thinking. Yet, despite dismissive rhetoric, few present detailed logic as to why such an occurrence could not happen. Taking a cue from the National Defense Panel, many analysts find the two-MTW construct inconvenient to their recommendations for transformation, since readiness for the simultaneous scenarios requires considerable expenditure of resources and the maintenance of considerable standing forces.

When assessments of potential regional conflicts (derived from consensus point number 5 above) are combined, the possibility of crises or conflicts developing nearly simultaneously in two or more regions seems plausible. There are both historical precedents and strategic logic for a potential regional opponent to make aggressive moves when conflicts are occurring in other parts of the world. While the United States is responding to the first conflict or contingency, an aggressor might believe that the objectives of a second conflict would be easier to achieve.

It has become common to describe recent NATO actions against Serbia—presumed to be a smaller-scale contingency—as using one MTW-worth of airpower.[91] If SSCs occur at a near-continuous rate, it is almost inevitable that two or more will occur nearly simultaneously. The United States may not choose to involve itself in more than one SSC, but if it did choose to handle two, what would happen if one or both were to require an effort worth two MTWs? The divergence of views on the probability of overlapping MTWs, like the other contradicting statements, forms fundamental issues of the debates to be expected in the QDR 2001 process.

2. (A) Future wars will be more brutal with more civilian casualties.
or
(B) Information operations and precision weapons will make warfare less deadly.

The question of whether future wars will be characterized by greater brutality and greater civilian casualties or instead by more discriminate attacks and fewer civilian casualties often arises in debates concerning the existence and effect of an RMA and the importance of information warfare. At one end is the view that the trend is toward a "world of warriors" in which youthful populations of less economically developed nations are involved in ethnic, religious, or tribal conflict. This gives rise to more brutal forms of warfare, in which in the international laws of war are rarely observed.[92] The ethnic cleansing of Bosnia and Kosovo (along with a myriad of civil wars), conducted largely by paramilitary terror squads whose primary activities involve the killing of unarmed civilians, are cited as representations of the future of war.[93] Combatants and noncombatants are rarely distinguished. Victory consists of complete destruction of the lives and property of an enemy.[94] Such wars will involve ethnic cleansing, genocide, mass movement of refugees, famine, torture, and rape. Weapons can range from the primitive to the merely unsophisticated. While armored vehicles, artillery, and shoulder-held anti-aircraft missiles may be used, the dominant platform is the individual warrior—as young as 12 or under—and the small arms carried.[95] Commercial global positioning system receivers and cellular phones are useful, but not essential for operations. The implication is that the sophisticated precision weapons, along with the information systems, that characterize U.S. Armed Forces have relatively little effect against such an enemy.[96]

At the other end is the vision that precision weapons and information warfare will make warfare both less likely and less bloody. Kosovo is also used as an illustrative case, this time as an example of how precision bombing, with considerable effort to spare civilian lives and property, was able to win a modern war and reverse ethnic cleansing. Because such precision strikes rely on accurate ISR, the processing of information is a dominant feature of this style of war. Proponents of information warfare argue that the manipulation of information may, in itself, preclude physical combat in future conflicts.[97] Under perfect conditions, it is argued, the manipulation of information will prevent a populace from going to war by persuading its members that the war is unjustified or is already over, or turning them against governments intent on war.

Somewhere in between these views is the argument that future wars will not necessarily be more brutal, but that precision strike and information warfare do not presage an era of immaculate warfare. The U. S. Commission on National Security/21st Century, while generally enthusiastic about the precise effects of emerging military technology, expresses this middle ground in its findings:

> Despite the proliferation of highly sophisticated and remote means of attack, the essence of war will remain the same. There will be casualties, carnage, and death; it will not be like a video game. What will change is the kinds of actors and the weapons available to them. While some societies will attempt to limit violence and damage, others will seek to maximize them, particularly against those societies with a lower tolerance for casualties.[98]

3. (A) Chaos in littorals or panic in the city are more likely contingencies than MTW.

or

(B) MTW will remain the primary threat to security.

The issue of the separation between military personnel and civilians, or between combatants and noncombatants, underlies the question of where and how future warfare will take place. Classical warfare is assumed to take place between clearly identified armies in terrain suitable for direct engagements. History—replete with siege warfare, attacks on infrastructure, and massacres of civilian populations—may demonstrate that the ideal is actually an exception. However, there remains the popular impression that war is, or at least should be, about defeating cross-border aggression as envisioned in the current MTW scenarios.

Of course, the Armed Forces are used for more than MTWs. Throughout its history, America has called on its Armed Forces to deal with many contingencies outside of formally declared wars. These contingencies have ranged from punitive expeditions to humanitarian interventions. The number of such SSCs has greatly increased since the end of the Cold War. Along with a greater propensity on the part of American decisionmakers to intervene, American military involvement in MTW against cross-border aggression has been relatively rare. From this perspective, Operation *Desert Storm* represents the exception rather than the rule.[99] Given the apparent increase in the number and frequency of nonstate threats and the potential for asymmetric operations, it has been suggested that the primacy of the DOD focus on preparing for classical MTW is a

mistake. The threats of the future, according to this view, will be significantly different and require a different emphasis in preparations.

One perspective is that future conflicts—particularly those within failed states—will present little opportunity for firepower-intensive warfare. There will be no front lines, no rear areas, and, in some cases, no clearly identifiable enemy force. Rather, there will be an overall atmosphere of chaos in which the primary mission of U.S. military forces will be to establish order and to quell violence in the most humane way possible. Forecasts sponsored by the Marine Corps point to the continuing urbanization of the world's population and the continued breakdown of failed states as leading to numerous tribal-like conflicts.[100] Apropos of a naval service, Marine Corps–sponsored briefs point to the fact that over 70 percent of the world's urban population is within the operating range of a coastline, otherwise known as the littoral region. Chaos in the littorals is shorthand for such future contingencies that occur within the region, intervention into which could potentially be done best by forces from the sea.[101]

A slightly different perspective can be termed panic in the city, spurred by the potential use of chemical or biological weapons in urban areas. Proponents of this view are concerned that asymmetric or terrorist attacks could create chaotic conditions within the U.S. homeland.[102] The U.S. military would be expected to stabilize chaotic conditions not only overseas, but also to do the same at home. While many emerging strategy alternatives call for increased military involvement in homeland security, most assume that the military would play merely a support role to civil authorities, providing resources that may not be readily available in the civil sector. In contrast, those who view panic as the new weapon envision homeland security as the preliminary or even the primary mission of the Armed Forces. The implication is that civilians cannot face the physical or psychological aspects of the chemical and biological warfare threat alone and that both precautions and responses should be a direct military function. Once the perception of homeland sanctuary is broken by an actual attack, the American population would panic into fleeing toward areas of perceived safety and demand that their elected officials cease whatever foreign activities may have provoked such an attack. To prevent such a scenario, sources argue, the military needs to refocus its efforts away from the less likely case—classical military response to cross-border aggression—and toward the more direct and more likely threats of asymmetric attacks against the homeland and the use of panic as a weapon of the globalized future.[103]

In contrast, a significant number of sources continue to view MTW as the most likely warfare in which the United States would become involved, and job number one for its military. From this perspective, America's large-scale warfighting capability is the primary deterrent of both chaos and asymmetric attack. The divergence of opinion on whether future warfare will *primarily* take the form of chaos in the littorals and panic in the city, or will mostly resemble the expected forms of MTW, appears to be more related to preferred prioritization of threats than any conclusive forecast of wars to come. But there is evidence on both sides of the issue.

4. (A) Space will be a theater of conflict.
or
(B) Space will remain a conduit of information, but not a combat theater.

The question of the so-called militarization of space is particularly contentious. Space-based ISR is critical to U.S. military operations. They gave such an informational and command and control advantage during Operation *Desert Storm* that some have referred to the Gulf War as "the first space war."[104] However, there are great distinctions between the military *use* of space, a war *from* space, and a war *in* space.[105] Every future assessment predicts increasing use of space assets by the military; however, there are wide differences over whether a war from or in space could occur in the timeframe prior to 2025.[106]

A number of sources are very certain of the potential for a force-on-force space war. The U.S. Commission on National Security/21st Century's "Major Themes and Implications" states explicitly that "Space will become a critical and competitive military environment. Weapons will likely be put in space. Space will also become permanently manned."[107]

An opposing viewpoint is the forecast that militarization of space is not likely to occur prior to 2025. This reasoning projects a continuing U.S. advantage in military space systems based on its previous investment and infrastructure development. From this posture, "the United States is in a good position to win any ensuing arms race."[108] Another potential inhibitor of space-based weapons are the international treaties governing space activities.[109]

But skeptics of treaty prohibitions tend to share a view of the inevitability of the introduction of space weaponry in the 2001–2025 timeframe. As former Secretary of the Air Force Sheila Widnall argued, "We have a lot of history that tells us that warfare migrates where it can—that

nations engaged in conflict do what they can, wherever they must. At a very tender age, aviation went from a peaceful sport, to a supporting function, very analogous to what we do today in space—to a combat arm. Our space forces may well follow that same path."[110] A similar argument was made by the DOD Space Architect in 1997: "To hope that there will never be conflict in space is to ignore the past."[111]

5. (A) A near-peer competitor is inevitable over the long term; we need to prepare now.

or

(B) Preparing for a near-peer will create a military competition (thus creating a near-peer).

As discussed above in consensus point number 3, the development of a global military near-peer competitor to the United States prior to 2025 is unlikely. However, that forecast does not quell the debate on whether such a near-peer is inevitable in the long term. Sources that view a near-peer as inevitable base their argument on historical example; every aging leader is eventually challenged by younger, growing competitors. To ignore this is also to ignore the past. In the study of international relations, there appears always to be a struggle among states to become the hegemon that dominates the international system.[112] Even scholars who question the morality of hegemonic control—and in particular the apparent U.S. position as the current hegemonic power—appear to believe that such a struggle is natural between states.

If the struggle for hegemonic control is the natural order of the international system, it would also be natural that those responsible for the security of the United States—including its freedom, its institutions, its population, and its prosperity—would prepare for such a struggle. While there may be a continuous debate as to which preparations are most appropriate and how the outbreak of hostilities can be deterred in the near term, there seems to be agreement among many that a dissatisfied state could eventually build itself into a military near-peer to the United States sometime after 2025. The belief in the inevitability of a near-peer is also reflective of consensus point number 8 that "advanced military technology will become more diffuse." As military technology becomes more diffuse, it appears inevitable that any American advantage in military technology will gradually shrink, creating de facto near-peer competitors.

There is, however, an alternative view on the inevitability of military near-peer competition. In this view, it is not "natural order" that causes near-peer challengers to arise, but, rather, the actions of the leading power

that cause such a competition.[113] Supporters of this view range from those who see a competitive international system as an anomaly of the capitalist world to those who view gradual world democratization as eventually leading to a world free from major war, under the premise that democracies do not fight democracies. Others subscribe to the belief that near-peer competition is not inevitable as an unspoken corollary to their idea that a leading power can take actions that prevent such a competition from occurring. To some extent, such a view underlies the premises of the proposal by Ashton Carter and William Perry for "preventive defense."[114]

The question of the inevitability of a near-peer competitor after 2025 is not merely an academic question. It ties directly to the choice of a future defense policy. If conflict with a near-peer competitor is inevitable after 2025, it would behoove the United States to take distinct steps to develop a defense policy and force structure that would retain military superiority sufficient to dissuade, deter, or—if necessary—defeat a potential near-peer opponent.[115]

However, if it is actual or proposed military preparations of the hegemon that propel other states to seek parity, it may be in the interest of the United States to break the cycle of increasing military expenditures in order to prevent the development of a near-peer. Specific policies could be adopted—along the lines of preventive defense—that seek to co-opt or to manage a potential near-peer by allowing a degree of American vulnerability in order to preserve the current balance, which appears to favor the United States.[116]

6. (A) Overseas bases will be essentially indefensible.
or
(B) Future capabilities will be able to defend overseas bases.

The potential reach of opponents into space, along with the adoption of other techniques of antiaccess or area denial warfare, would have a damaging impact on the overseas bases upon which America's current power-projection forces appear to depend. If the 2001–2025 period is indeed one in which potential opponents strengthen their antiaccess capabilities (as appears to be the consensus in point number 13 above), then the threat to overseas bases would appear to increase. This forecast is commonly accepted.[117] However, there is a debate among the sources as to whether the nature of the future security environment, and the laws of physics and diffusion of technology, will make an overwhelming threat to fixed land bases permanent.

To the bases-will-be-indefensible school, defensive measures simply cannot keep up with the offensive threat that places fixed military forces at grave risk.[118] In this perspective, the action-reaction phenomenon of military technological development naturally favors offensive systems. Even with theater ballistic missile defenses in place, overseas bases could be attacked with WMD by other means of delivery, such as cruise missiles, attack aircraft, or artillery shells.

At the same time, there may be political vulnerabilities that make overseas bases, particularly those within the sovereign territory of a host nation, much more difficult to defend. The host nation may seek to placate a potential aggressor by insisting that defenses be kept minimal in order to maintain the current strategic balance. If the base relies on the movement of mobile defenses into the theater, such as Patriot missile batteries, then they are vulnerable to preemptive attack or coercion. The host nation may decide not to let the United States use its base facilities lest such permission provoke an attack by a regional aggressor. This would make mounting a power-projection campaign considerably more difficult.

It may be a reaction to the implications for American power projection that causes other sources to insist that overseas bases could be successfully defended in the 2001–2025 timeframe. To admit growing vulnerability could cause undesired revolutionary changes in the allocation of defense resources. However, the view that bases can be defended also argues that emerging military technologies can make defenses against WMD more effective. The continuing and natural lead of America and its allies in emerging military technology, as identified in consensus points 10 and 11, cause some to conclude that defenses can match offenses, particularly when backed by the eventual triumph of qualitatively (and possibly quantitatively) superior U.S. power projection.[119] Likewise, the regional use of WMD may be deterred by the vast U.S. nuclear arsenal, use of which might be provoked by significant casualties of American military personnel or host-nation civilians. Other sources argue that overseas bases can be defended by sea-based or space-based systems.

Additionally, there is the argument that the vulnerability of land bases actually works to the advantage of the Nation. If overseas-based U.S. forces are attacked, then it is likely that U.S. determination to push for the enemy's regime change would be reinforced. This perception could potentially deter a regional aggressor from launching such a strike. Also, the vulnerability of the host-nation's territory to an aggressor might provoke the host nation to seek greater rather than lesser military cooperation with the United States.

Some also argue that any host nation that could be coerced to restrict U.S. access to bases is an ally simply not worth defending.[120]

7. (A) Current (legacy) U.S. forces will not be able to overcome antiaccess strategies except at high cost.

or

(B) Techniques of deception or denial of information will remain effective in allowing legacy systems to penetrate future antiaccess efforts.

The debate on the defensibility of overseas bases has a parallel with that on the continuing effectiveness of power-projection forces. Supported by the same data concerning the growing development of antiaccess systems and strategies (consensus point 13), a number of sources suggests that the power-projection forces of the United States—as they are currently constituted—will have increasing difficulty penetrating antiaccess defenses in the 2001–2025 period.

The proponents of this view, however, do not necessarily see these developments as an evolutionary challenge to which the United States can modify and adapt its current forces. Rather they see this as a revolutionary development that is enabled, in part, by foreign adaptation to the RMA. This position leads to the advocacy of radical changes in the U.S. defense posture. Indeed, the perception of the growing strength of antiaccess strategies is a major impetus to calls for defense transformation.

In contrast, there remains a body of literature that characterizes antiaccess strategies as natural aspects of war that require incremental improvements in U.S. power-projection forces, but are not a revolutionary development requiring radical change. This view argues that current developments, particularly in theater missile defense and standoff and precision weapons, allow power-projection capabilities to keep pace with antiaccess systems.[121] The Army vision of a strategically responsive force that is less dependent on heavy equipment and multiple air- and sea-lifts contributes to the perception that power projection forces may become even more effective in the 2001–2025 period.[122]

8. (A) Nuclear deterrence will remain a vital aspect of security.

or

(B) Nuclear deterrence will have a smaller role in future security.

Sources are split in their assessment of the importance of nuclear weapons and the validity of traditional nuclear deterrence in the 2001–2015 period. On the one hand are those who see nuclear weapons

as decreasingly effective tools in deterring war.[123] On the other are those sources who concede that nuclear weapons may have a different role than at the height of the Cold War, but who argue that they remain the ultimate deterrent, with considerable effect on the actions of even rogue states.[124]

Many who state a moral opposition to nuclear weapons have translated this into forecasts of a globalized world in which nuclear deterrence no longer makes sense. With greater economic interdependence, this argument runs, even the so-called rogue states will be reconciled to the international order, renouncing or reducing their overt or covert nuclear arsenals.

Sources that view future conflict as consisting primarily of brutal civil wars in undeveloped states—along with Western intervention to prevent suffering and injustice—see no utility in nuclear weapons. From a considerably different perspective, some suggest that the RMA has simply passed nuclear weapons by. If information operations will be the dominant form of conflict in an *internetted* world, the use of nuclear weapons would seem merely suicidal. Nuclear effects, such as electromagnetic pulses (EMP), hold the potential of destroying much of the technical access to information on which both war and international society are dependent. Again, there would seem to be no utility in nuclear warfighting, and therefore nuclear deterrence is confined to a background role. Others who focus on the potential for RMA advances to make national missile defenses effective argue that a defense-dominant world will eventually lead to the abolition of nuclear arsenals. Some sources argue that nuclear deterrence has little effect on irrational rogue regimes and terrorist groups, the two types of adversaries most likely to attempt asymmetric attacks on the U.S. homeland.

Others view nuclear weapons as retaining considerable deterrent effect, even on rogue regimes. Since, it is argued, active defenses can never be 100 percent effective, the potential for nuclear destruction will remain. Nuclear deterrence therefore retains a considerable role in protecting the homeland from WMD.[125] A few sources suggest that a world in which there are more nuclear powers is a world in which interstate conflict is much less likely.[126] Peace would be even more dependent on nuclear deterrence than it is today.

Divergence of views on the importance of nuclear deterrence in 2001–2025 seems to presage a continuing debate on that portion of future American defense policy.

9. (A) Conventional military force will not deter terrorism or nonstate threats.

or

(B) U.S. military capabilities will retain considerable deterrent or coercive effects against terrorism and nonstate threats.

Sources that focus on the increasing vulnerability of the U.S. homeland and on the potential for asymmetric attack tend to doubt the ability of conventional military force to deter such attacks. Many of these sources tend to downplay the role of nuclear weapons and assume that potential opponents would concentrate on developing chemical or biological WMD, rather than expend resources on developing an extensive nuclear arsenal. Biological weapons, in particular, are frequently assumed to be immune to deterrence by conventional military forces, and possibly by nuclear weapons as well.[127] The logic is that opponents who would be so irrational or immoral as to use biological weapons (particularly against civilian populations) would not easily be swayed by the threat of extensive damage to their own people.[128] More importantly, terrorist groups—having no state or population to protect—do not necessarily present the vulnerabilities of a traditional military opponent. If there is an inherent difficulty in determining the actual perpetrators of a biological attack, then there may be no apparent target for conventional (or nuclear) forces to attack.

An opposing viewpoint is that there are always vulnerabilities that can be attacked—even for terrorist groups.[129] Presumably, terrorists act for causes that have overt elements, such as political independence for a certain population. Contrary to the most alarmist speculations, effective terrorist groups tend not to be crazy or self-destructive.[130] Proponents of this position point to the example of the 1986 Eldorado Canyon reprisal on Libya, which appeared to cause Muammar Qaddafi to reduce his support of terrorist activities.[131] With a combination of intelligence, overt reprisal, covert reprisal, effective law enforcement, and some degree of consequence management preparations, it would seem possible that terrorist activities—particularly with weapons as sophisticated as WMD, which are extremely difficult to obtain or to utilize effectively—could be prevented, dissuaded, or deterred.

Conclusion

The nine points of divergence described above are based on differing assumptions concerning the implications of the previously identified consensus points. It is possible for opposing points of view to accept the plausibility of any or all of the consensus points and yet to advocate substantially

Table 2–3. Consensus Scenario

In 2001–2025, U.S. military forces need to prepare for:

- military challenges by a regional competitor;
- attempts by a regional competitor to attack the U.S. homeland utilizing asymmetrical means;
- use of antiaccess and area denial strategies by regional competitors;
- use of WMD by regional competitors as part of antiaccess operations;
- involvement in failed states and in response to nonstate threats at the discretion of national command authorities (but some degree of involvement is inevitable);
- operations in urban terrain and under "chaotic" conditions (by some, but not all, of the force);
- continual diffusion of military technology to potential competitors and nonstate actors;
- high level of information warfare.

different defense policies. This allows for the development of baseline expectations that American defense policy will need to fulfill to maintain security in 2001–2025. From this baseline, alternative options for policy can be explored. In developing likely strategy choices for the QDR, the working group incorporated the differing positions on the nine points into the alternative worldviews that drive the choices.

The identification of divergent viewpoints helps to frame the more contentious issues of the defense debate. But, in addition, it suggests that there may be potential developments that future defense policies may need to hedge against. If reputable, well-informed sources differ as to the future impact of chaos and urban warfare, for example, or on the future role of nuclear deterrence, it may be prudent to develop policies that are effective under multiple alternatives. Another element that suggests the need for hedging strategies is the identification of outliers and wildcards.

Constructing a Consensus Scenario

Having identified the points of consensus appropriate for consideration in the QDR 2001 process, the task is to present these findings in a way that is useful for defense planning. Constructing a consensus scenario that identifies a baseline common view of the expected future is a logical starting point. To this baseline can be added the contentious issues and appropriate potential wildcards. The alternative views of the dissenters can then be used as conceptual excursions from the baseline.

By means of these excursions, policy decisions based on the consensus scenario can be evaluated in terms of their ability to hedge against alternative futures. Table 2–3 provides the outline for a baseline consensus scenario that incorporates both the points of consensus and common aspects of some of the points of divergence. The consensus scenario for 2001–2025 can also be presented in narrative form as outlined in the following discussion.

The most critical challenge to the Armed Forces will be readily identifiable military threats by one or more regional competitors. These regional competitors will not have the global power-projection capabilities of the United States and will not be able to mount militarily significant operations outside of their own immediate regions against the Armed Forces. U.S. control of the global commons of sea and international airspace will remain relatively secure.

But, because they cannot compete as a global military peer, regional competitors will seek to increase their chances of success by developing the capabilities to conduct limited attacks on the U.S. homeland and by excluding the military from their immediate region using antiaccess or area denial strategies and systems.

In peacetime, their intent will be to create an appearance that the United States would not have the means or will to prevail in a conflict in their region, thus neutralizing potential allied support for American actions. In wartime, their intent would be more to achieve a political settlement favorable to their objectives than to inflict a decisive military defeat on the Armed Forces. The threat of severe American personnel casualties is increased through the possession and use of WMD against forward-deployed forces and U.S. power-projection forces entering the region, or the allied infrastructure that could support U.S. intervention. It will be increasingly difficult to defend overseas U.S. land bases from mass attacks. The likelihood of WMD use in these circumstances is high, although the weapons used are likely to be chemical or biological rather than nuclear.

WMD attacks would likely be focused on military forces or supporting infrastructure rather than U.S. or allied populations. This will not be the result of moral qualms, but rather an attempt to prevent the equivalent of the Pearl Harbor effect on the United States (or one of its allies) provoked to seek revenge. Another potential aspect of WMD use would be a nuclear-generated electromagnetic pulse (EMP) in an attempt to eliminate the U.S. advantage in ISR command, control, and communications (C^3) systems.

As an adjunct to their antiaccess efforts, and in an attempt to sway U.S. public opinion toward a political settlement, regional competitors would attempt to conduct a high level of information warfare. American public opinion will be seen as a center of gravity. Information warfare—as well as overall antiaccess capabilities—will be facilitated by a continual diffusion of advanced military technologies throughout the world. This diffusion includes access to commercial imagery and communication via space systems.

However, the diffusion of military technology is not likely to cause a reduction in the U.S. advantage in military technology, which derives from overall American economic and technological strengths. It is likely that major technological breakthroughs will occur primarily in the United States or its economically developed allies, generated through commercial efforts. Regional competitors may be able to generate a temporary military advantage in a particular technological niche, but such advantages will not hold for long. Opponents' access to commercial satellite systems is not likely to continue during hostilities against the United States.

Increased military technology will also be sought by potential nonstate adversaries, such as terrorist groups, and in the myriad of civil conflicts erupting in an increasing number of failed states. Military intervention against nonstate actors and in failed states will be expected missions, although not the primary ones, for the Armed Forces. Such interventions or SSCs will continue to remain discretionary, and different U.S. administrations may choose differing levels of involvement. However, some level of involvement appears inevitable. As part of these interventions (and possibly as part of a regional war), some portion of the U.S. military will be expected to conduct operations in urban terrain and under chaotic conditions.

The Armed Forces will be expected to utilize available assets in humanitarian assistance and in support for domestic civil authorities. Likewise, homeland defense—in response to asymmetric threats—will be an expanding mission. Evolving challenges in homeland defense will include the possibilities of limited ballistic missile attacks by rogue states and the potential use of chemical or biological weapons by terrorists. However, the majority of the U.S. military will be required to remain organized to conduct power-projection operations during regional conflicts, a posture conceptually similar to today.

Events to Hedge Against

In addition to the use of the consensus scenario as a planning tool, there are a number of wildcards or unlikely events that a prudent defense plan would consider as potential contingencies. Wildcards can be defined as risks to national security that, by their very nature, cannot be predicted or fully anticipated.[132] However, the effects of some wildcards could be so devastating to American security that their consideration in creating hedging strategies is of vital importance.[133] These include an eventual military near-peer competitor; an alliance of regional competitors; attempts to leap-frog into space warfare; collapse of key ally or regional support; and a trend toward a world of warriors.

This list is based on both a review of the points of divergence and an examination of wildcards identified during the survey of sources. Some appeared inappropriate for defense planning and are not included in the five events identified above.[134] The five events selected have three features in common: they are events for which preparations in military planning or force structure are practicable; if they occurred, then their effects would be magnified by the expected trends identified by the consensus security environment; and they hold the potential to create significant danger for the United States.

A hedge against an unexpected event could take two forms: Contingency plans could be developed and a select group of resources could be maintained in reserve in order to carry out the plans; or highly adaptive systems could be developed to operate under unexpected conditions as well as to perform optimally in anticipated missions.

Conclusion

The debates that defense reviews engender are always messy. The media make quite a sport of pointing out the conceptual disunity and lack of jointness among the "squabbling" armed services. Rarely mentioned is the fact that defense policy in a democracy was meant to be contentious and inefficient. To debate up until the very moment the guns sound was always considered a healthy thing. This is in clear contrast to the policies and procedures of authoritarian regimes. For example, Chinese Communist Party Chairman Deng Xiaoping admonished his political and military strategists: "Don't debate. . . . Once debate gets started, things become complicated."[135] But powerful militaries that do not debate, such as the German *Wehrmacht* or the Soviet armed forces, seem to end up on the wrong side of history.

Americans like debate, and we generally view the future as complicated, even if we would like to be able predict it. QDR 2001 will also be complicated, as will any subsequent review. But one of the ways we can begin cutting through the complications and getting to the issues worthy of debate is to start from a consensus view of the characteristics we expect in the future security environment.

Appendix: Primary Sources Surveyed

The underlying objective of the selection process for the primary sources was to collect material that generally represents viewpoints from the range of different types of organizations (and, by extension, individuals) that influence defense planning in the United States. A working assumption was that a representative view could be identified for the following types of organizations: Congress (in the form of congressionally-mandated reviews); the White House; intelligence community; Office of the Secretary of Defense (OSD); Joint Chiefs of Staff and unified commanders in chief (CINCs) of combatant forces; war colleges; individual services (Army, Navy, Marine Corps, Air Force); federally-funded research institutes; independent research institutes; NGOs; independent or ad hoc citizen commissions; private consultants; political opposition; and a range of independent scholars whose work influences the defense debate. After prospective sources were identified for the above organizational categories, the following standardized criteria were used to determine whether the source constituted an assessment of the future security environment suitable for detailed analysis. In accordance with the criteria, a primary source should:

- focus on the overall future security environment, not just the individual drivers (such as population growth, availability of resources, etc.) of future trends;
- examine multiple subjects affecting the future security environment;
- be potentially representative of the collective views of an organization influential in national defense policymaking;
- be produced by a source with a solid professional or scholarly reputation;
- have been published since 1996; and
- if a U.S. government product, be unclassified or provide analysis of the future security environment in unclassified sections.

Based on these criteria, at least one source per category was selected; in certain cases, multiple sources were deemed necessary to provide for the representative view. Representative views of the future are not necessarily the official view of the organization concerned.

Some studies published in 1996 might not have achieved wide circulation by the May 1997 completion of the QDR 1997, hence the inclusion of that year. Two 1995 studies were included because they represent organizations that did not sponsor a later study on the future security environment.

Congressionally-Mandated Reviews

Department of Defense, *Report of the Quadrennial Defense Review*, May 1997.

National Defense Panel, *Transforming Defense*: *National Security in the 21st Century*, December 1997.

U. S. Commission on National Security/21st Century, *New World Coming: Studies and Analyses*, September 15, 1999.

White House/National Security Council

The White House, *A National Security Strategy for a New Century*, October 1998.

The White House, *A National Security Strategy for a New Century*, December 1999.

Intelligence Community

National Intelligence Council, *Global Trends 2010* (Washington, DC: November 1997).

Working papers, briefing materials and notes from "Alternative Global Futures: 2000–2015" workshops held September, October, and December 1999. (Global Trends 2015 project is still ongoing. Background and briefing material and discussion notes were used for the survey.)

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Office of the Secretary of Defense

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Notes

[1] This chapter summarizes the details contained in Sam J. Tangredi, *All Possible Wars? Toward A Consensus View of the Future Security Environment, 2001–2025*, McNair Paper 63 (Washington, DC: National Defense University, 2000).

[2] The future security environment for QDR 1997 was primarily derived from classified intelligence estimates and the unclassified work of two primary sources: the Global Trends 2010 project of the National Intelligence Council and assessments by the Institute for National Strategic Studies, National Defense University. This chapter proposes a more inclusive input.

[3] United States Commission on National Security/21st Century, Philip L. Ritcheson, primary author, "Study Addendum" to *New World Coming* (published on website only; not released with report text), September 15, 1999, 10–11.

[4] These standardized criteria are discussed in the appendix to this chapter and detailed in Tangredi, *All Possible Wars?* 8–9.

[5] The 300 secondary sources are listed in Appendix B (161–183) of Tangredi, *All Possible Wars?*

[6] A detailed evaluation of these strengths and weaknesses can be found in Tangredi, *All Possible Wars?* 15–20.

[7] Perhaps the most telling historical example of unwarranted belief in certainty was the British Cabinet's "Ten-Year Rule" used between the First and Second World Wars. See Brian Bond and Williamson Murray, "The British Armed Forces, 1918–39," in Allen R. Millet and Williamson Murray, eds., *Military Effectiveness,* Volume II: *The Interwar Period* (Boston: Allen and Unwin, 1988), 101.

[8] See Tangredi, *All Possible Wars?* 21–29.

[9] The term "prominent dissenters" here refers to analytical, political, or scholarly sources that we deemed likely to have an effect on U.S. defense policy: generally authorities used by DOD for analysis, or who have a track record of influencing the thinking of government decisionmakers.

[10] A succinct statement of this argument can be found in Donald M. Snow, *The Shape of the Future: World Politics in a New Century*, 3d ed. (Armonk, NY: M.E. Sharpe, 1999), 128–130.

[11] Jacquelyn K. Davis and Michael J. Sweeney, *Strategic Paradigm 2025: U.S. Security Planning for a New Era* (Dulles, VA: Brassey's, 1999), 14–15.

[12] A number of previously enthusiastic authorities on the post-Cold War expansionism of democratic values now suggest that exponential growth in democracies may be over. See, for example, Larry Diamond, "Is the Third Wave Over?" *Journal of Democracy* 7, no. 3 (July 1996), 20–37.

[13] See, for example, Ralph Peters, "Our Old New Enemies," in Lloyd J. Matthews, *Challenging the United States Symmetrically and Asymmetrically: Can America Be Defeated?* (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, July 1998), 215–238; Robin Wright, "Democracy: Challenges and Innovations in the 1990s," *The Washington Quarterly* 20, no. 3 (Summer 1997), 23–36. *The National Security Strategy For A New Century* (October 1998 version) suggests that "if citizens tire of waiting for democracy and free markets to deliver a better life for them, there is real risk that they will lose confidence in democracy and free markets"; iv.

[14] Samuel P. Huntington, *The Clash of Civilizations and the Remaking of World Order* (New York: Simon and Schuster, 1996); Samuel P. Huntington, "The Clash of Civilizations?" *Foreign Affairs* 72, no. 3 (Summer 1993), 22–49.

[15] However, other sources—including Middle East regional specialists—tend to agree that, "like their secular counterparts, on most issues many [Islamic-oriented political actors] would operate on the basis of national interests and demonstrate a flexibility that reflects acceptance of the realities of a globally interdependent world." Even some who acknowledge the potentially destabilizing effect of Islamic fundamentalism argue that fundamentalism is now waning. See John L. Esposito, "The Islamic Factor," in Phebe Marr, ed., *Egypt at the Crossroads: Domestic Stability and Regional Role* (Washington, DC: National Defense University Press, 1999), 61–62; Max Rodenbeck, "Is Islamism Losing Its Thunder?" *The Washington Quarterly* 21, no. 2 (Spring 1998), 177–194.

[16] See <www.stratfor.com>, "Global Intelligence Update—5 June 2000; Retrieving the Irretrievable: The Clinton Foreign Policy Legacy," June 4, 2000.

[17] However, there are discussions of how an independent European military structure could balance American power. See, for example, Jean-Marie Guehenno, "The Impact of Globalisation on Strategy," *Survival* 40, no. 4 (Winter 1998–99), 16–18; Frederick Bonnart, "U.S. Starts to Fret Over EU Military Independence," *International Herald Tribune*, May 24, 2000.

[18] Davis and Sweeney, *Strategic Paradigm 2025*, 226. "Chinese opposition to the United States is not the result of current trends in Sino-U.S. relations… [but] developed following a series of poor policy choices by both Beijing and Washington that have moved them into a more antagonistic posture than either state had intended."

[19] Others suggest that the PRC is more likely to employ a massive military strike without warning against Taiwan, spearheaded by ballistic missile attack. See, for example, Robert Kagan, "How China Will Take Taiwan," *The Washington Post*, March 12, 2000, B7; and Gary Schmitt and Thomas Donnelly, "Our Interests Lie With Theirs," *The Washington Post*, April 23, 2000, B4.

[20] Davis and Sweeney, *Strategic Paradigm 2025*, 238.

[21] Henry Chu and Richard C. Paddock, "Russia Looks to China as an Ally Amid West's Ire," *Los Angeles Times*, December 8, 1999, 1. Rajan Menon describes Russian-Chinese rapprochement as a "strategic convergence" directed against the United States rather than based on any mutual "trust or goodwill." Menon, "The Strategic Convergence Between Russia and China," *Survival* 39, no. 2 (Summer 1997), 101–125.

[22] <www.stratfor.com>, "Herding Pariahs: Russia's Dangerous Game," Stratfor.com, *Weekly Global Intelligence Update*, February 8, 2000.

[23] Agence France-Presse in Beijing, "Alliances Can Defuse Hegemonism by U.S.," *South China Morning Post*, March 8, 2000. Arguing that an effective alliance is unlikely is Jennifer Anderson, *The Limits of Sino-Russian Strategic Partnership*, International Institute for Strategic Studies, Adelphi Paper 315 (New York: Oxford University Press, December 1997). See also Norman Friedman, "The China Puzzle Continues to Baffle the West," *U.S. Naval Institute Proceedings* 126, no. 3 (March 2000), 4–6.

[24] The QDR 1997 report used the analogy of the Soviet Union in the Cold War, stating that "the security environment between now and 2015 will also be marked with the absence of a 'global peer competitor' able to challenge the United States militarily around the world as the Soviet Union did during the Cold War." Department of Defense, *Report of the Quadrennial Defense Review*, May 1997, 5.

[25] Ibid.

[26] A recent essay on the linkage between economic and military competition with China is Dana Rohrabacher, "Q: Should Congress be concerned about China and the Panama Canal?" *Insight on the News*, December 27, 1999, 40. A discussion on American fears of a competition with the EU can be found in William Wallace and Jan Zielonka, "Misunderstanding Europe," *Foreign Affairs* 77, no. 6 (November–December 1998), 65–79.

[27] See C. Fred Bergsten and Marcus Nolan, *Reconcilable Differences?: United States–Japan Economic Conflict* (Washington, DC: Institute for International Economics, June 1993). A review of recent sources on U.S.-Japanese security arrangements is Chris B. Johnstone, "Redefining the U.S.-Japan Alliance," *Survival* 42, no. 1 (Spring 2000), 173–181.

[28] See Thomas L. Friedman, *The Lexus and the Olive Tree: Understanding Globalization* (New York: Farrar, Straus and Giroux, 1999); Davis and Sweeney, *Strategic Paradigm*, 14–15.

[29] <www.stratfor.com>, "Decade Forecast—Decade Through 2005," December 24, 1994, 1.

[30] QDR 1997, 3.

[31] Current major theater war (MTW) planning focuses on Iraq, rather than Iran. However, the two contingencies are often linked when addressing American foreign policy objectives in the Gulf region. "This approach is consistent with the dual containment policy of the United States, which treats Iran and Iraq as twin pariahs. Although both reject being classified as a pair, American policy groups them together." Raymond Tanter, *Rogue Regimes: Terrorism and Proliferation* (New York: St. Martin's Press, 1998), xiii.

[32] National Intelligence Council (NIC), *Global Trends 2010*, argues that internal contradictions in both states would prevent such dominance in the near term. See 8–10. *New World Coming* states that "Major powers—Russian and China are two obvious examples—may wish to extend their regional influence by force or the threat of force." United States Commission on National Security/21st Century (USCNS/21), *New World Coming*, 47.

[33] Rogue states are generally "those states that support aggression and terrorism. A rogue state is an outlaw country capable of instigating conflict with the United States and its allies." NDU INSS, *Strategic Assessment 1999*, 3. Raymond Tanter identifies the "primary criteria" of rogue status as "large conventional forces, [support for] international terrorism, and [desire to possess] weapons of mass destruction. Tanter, *Rogue Regimes*, 261, note 1. Five states are usually included in intelligence assessments as rogues: North Korea, Iraq, Iran, Syria, and Libya. Tanter includes Cuba under the category of rogue regimes because it appears to support international terrorism. Sudan, which is also considered a rogue because of its support for terrorism, generally is not included in the list because it is thought to be a client state of another rogue—Iran—and does not possess large conventional forces. On June 19, 2000, Secretary of State Madeleine K. Albright announced that the Clinton administration would no longer use the term "rogue states," but that "henceforth nasty, untrustworthy, missile-equipped countries would be known as states of concern." This would appear to be a reaction to a recent meeting of the South and North Korean heads of state. See Steven Mufson, "What's In A Name? U.S. Drops Term 'Rogue State'," *The Washington Post*, June 20, 2000, 16. However, the term is ubiquitous within the analytical literature, and therefore has been retained in this chapter.

[34] There is a wealth of published recommendations in this regard. Prominent among them is Ashton B. Carter and William J. Perry, *Preventive Defense: A New National Security Strategy for America* (Washington, DC: Brookings Institution, March 1999), which discusses the immediate need for engagement of both Russia and China.

[35] A particularly witty treatment of this argument is Hank H. Gaffney, "Oh, to be weak" (unpublished paper circulated in 1998; available from author at Center for Naval Analyses).

[36] One argument for intervention to prevent massive but not normal levels of war-related deaths can be found in Stephen J. Solarz and Michael E. O'Hanlon, "Humanitarian Intervention: When is Force Justified?" *The Washington Quarterly* 20, no. 4 (Autumn 1997), 3–14.

[37] Arguing that the cumulative effect of failed states is a significant international security threat is Susan L. Woodward, "Failed States: Warlordism and 'Tribal Warfare,'" *Naval War College Review* 52, no. 2 (Spring 1999), 55–68.

[38] *New World Coming*, 96–99. Several nongovernmental organizations (NGOs) claim that pessimistic forecasts for Africa discourage investment, therefore perpetuating instability. The implication

is that they should be balanced by more optimistic assessments. See, for example, Peter Veit, ed., *Africa's Valuable Assets: A Reader in Natural Resource Management* (Washington, DC: World Resources Institute, 1998).

[39] Snow, *The Shape of the Future*, 170–172.

[40] See James F. Miskel, "Are We Learning the Right Lessons from Africa's Humanitarian Crises?" *Naval War College Review* 52, no. 3 (Summer 1999), 136–147.

[41] But see Martin Van Creveld, *The Rise and Decline of the State* (Cambridge, UK: Cambridge University Press, 1999), 336–421.

[42] An argument that "super-terrorism" is unlikely and that measures taken to prevent it may be counterproductive is Ehud Sprinzak, "The Great Superterrorism Scare," *Foreign Policy*, no. 112 (Fall 1998), 110–119.

[43] Zachary S. Davis, *Weapons of Mass Destruction: New Terrorist Threat?* CRS Report to Congress 97–75 ENR (Washington, DC: Congressional Research Service, January 8, 1997); Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, First Annual Report: *Assessing the Threat* (Washington, DC: RAND, December 15, 1999). A list of current sources on the topic of catastrophic terrorism can be found in USCNS/21, *New World Coming,* as footnote 95, 48.

[44] A number of sources identify information operations or information warfare as "weapons of mass destruction." The logic of this argument is that death and destruction on a large scale can occur by attacks on the computer networks controlling public utilities and transportation. However, these sources do not convincingly demonstrate that such attacks would result in casualties as extensive as from a successful nuclear or biological attack. In *New World Coming*, the more realistic term "weapons of mass disruption" is used (52).

[45] USCNS/21, *New World Coming*, 51. See also INSS, *Strategic Assessment 1999*, 293–294.

[46] On this point, *New World Coming* cites Roger C. Molander, David A. Mussington, and Richard F. Mesic, *Strategic Information Warfare Rising* (Washington, DC: RAND, 1998) as its source.

[47] See Joseph A. Engelbrecht, Jr., et al., *Alternative Futures for 2025* (Maxwell Air Force Base, AL: Air University Press, 1996), 49–53, 150, 169; Lieutenant Colonel Larry K. Grundhauser, USAF, "Sentinels Rising: Commercial High-Resolution Satellite Imagery and Its Implications for U.S. National Security," *Airpower Journal* 12, no. 4 (Winter 1998), 74–76; Frederick W. Kagan, "Star Wars in Real Life: Political Limitations on Space Warfare," *Parameters* 28, no. 3 (Autumn 1998), 117–118.

[48] Eliot A. Cohen, "A Revolution in Warfare," *Foreign Affairs* 75, no. 2 (March/April 1996); James R. FitzSimonds and Jan M. van Tol, "Revolutions in Military Affairs," *Joint Force Quarterly* 4 (Spring 1994), 24–31; and Andrew F. Krepinevich, Jr., "Cavalry to Computer: The Patterns of Military Revolutions," *The National Interest* 37 (Fall 1994), 30–42. A more skeptical discussion is Michael E. O'Hanlon, "Can High Technology Bring U.S. Troops Home?" *Foreign Policy* 113 (Winter 1998–99), 72–86; and O'Hanlon, *Technological Change and the Future of Warfare* (Washington, DC: Brookings Institution, 2000).

[49] One of the more enthusiastic advocates of pursuing the RMA is Admiral William A. Owens. See William A. Owens with Ed Offley, *Lifting the Fog of War* (New York: Farrar, Straus and Giroux, 2000), especially chapter 6, "Winning the Revolution."

[50] See Earl H. Tilford, Jr., *The Revolution in Military Affairs: Prospects and Cautions* (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, June 23, 1995); Kenneth F. McKenzie, Jr., "Beyond Luddites and Magicians: Examining the MTR," *Parameters* 25, no. 2 (Summer 1995), 15–21.

[51] "Only one country—the United States—currently has capabilities in all [RMA] areas, thereby indicating its centrality in any discussion of the RMA." Andrew Richter, "The American Revolution? The Response of the Advanced Western States to the Revolution in Military Affairs," *National Security Studies Quarterly* 5, no. 4 (Autumn 1999), 3.

[52] Engelbrecht et al., *Alternative Futures for 2025*, 171–172.

[53] USCNS/21, *New World Coming*, 120.

[54] Michael Dorgan, "Few surprised at firing of Los Alamos Scientist: Tip of Iceberg seen on Chinese spying," *Arizona Republic*, March 14, 1999, A17; Fox Butterworth and Joseph Kahn, "Chinese Intellectuals in U.S. Say Spying Case Unfairly Cast Doubts on Their Loyalties," *The New York Times*,

May 16, 1999, 1, 32; David Talbot and Ed Hayward, "Students say focus is studies, not spying," *Boston Herald*, May 26, 1999, 030.

[55] For example: Andrew F. Krepinevich, Jr., "Military Experimentation—Time to Get Serious," <www.csbahome.org>, March 3, 2000.

[56] Andrew F. Krepinevich, Jr., *Restructuring for a New Era: Framing the Roles and Missions Debate* (Washington, DC: Defense Budget Project, April 1995), 44–47; Krepinevich, "Cavalry to Computers: The Pattern of Military Revolutions," 37.

[57] "At present, the vast majority of countries in the developing world appear totally unprepared to adapt to the RMA, and thus any study that focused on them would, by definition, be brief." Richter, "The American Revolution," 1.

[58] Among future studies devoted specifically to potential wildcards is John L. Petersen, *Out of the Blue: Wild Cards and Other Big Future Surprises* (Washington, DC: Arlington Institute, 1997).

[59] Jan S. Breemer refers to this circumstance as "the end of naval strategy," implying that U.S. forces can focus on directly influencing effects on land. Jim Wirtz refers to it as "the golden age of United States seapower." See Breemer, "The End of Naval Strategy: Revolutionary Change and the Future of American Naval Power," *Strategic Review* 22, no. 2 (Spring 1994), 40–53; Wirtz, "QDR 2001: The Navy and the Revolution in Military Affairs," *National Security Studies Quarterly* 5, no. 4 (Autumn 1999), 43–60.

[60] It is likely that some competitors will seek to build or to purchase fourth-generation platforms and the most modern ocean-going warships in relatively small numbers to dominate regional opponents. If used in actual combat operations directly against the U.S. naval and air fleets, it is likely that they would operate as a high-tech guerrilla force, attacking areas of perceived weakness until they were destroyed or securely hidden from U.S. response.

[61] Illustrative of this argument is John A. Tipak, "Can the Fighter Force Hold Its Edge?" *Air Force Magazine* 83, no. 1 (January 2000), 25–31.

[62] Martin Van Creveld maintains that the warmaking abilities of the modern state will continue to weaken, ensuring that large-scale clashes of sea or air power will not occur. In a sense, his overall argument implies that all states will become failing states. Martin Van Creveld, *The Rise and Decline of the State* (Cambridge, UK: Cambridge University Press, 1999), 337–354, 419.

[63] Arguing that "increasingly, other countries strategies will be oriented around keeping the U.S. out of their region" is Under Secretary of Defense (Policy) 1999 Summer Study Final Report, *Maintaining U.S. Military Superiority* (assembled briefing slides and text), Newport, RI, July 25–August 4, 1999; quotation, 19.

[64] WMD can be considered asymmetric because the U.S. Navy is largely configured for open-ocean operations. An excellent study of the historical and environmental factors influencing near-shore naval operations is Milan N. Vego, *Naval Strategy and Operations in Narrow Seas* (Portland, OR: Frank Cass Publishers, 1999).

[65] A skeptical view of the ballistic missile threat to CONUS can be found in "NMD: The Hard Sell," *Jane's Defence Weekly* 33, no. 11 (March 15, 2000), 19–23.

[66] See discussion in Kenneth F. McKenzie, Jr., *Revenge of the Melians: Asymmetric Threats and the QDR*, McNair Paper 62 (Washington, DC: National Defense University Press, 2000), 8–10.

[67] See discussion in Thomas G. Mahnken, "America's Next War," *The Washington Quarterly* 16, no. 3 (Summer 1993), 171–184.

[68] A typology of antiaccess strategies that could be used against power-projection forces can be found in McKenzie, *Revenge of the Melians*, 46–52.

[69] See James R. Boorujy, "Network-Centric Concepts Can Guarantee Access," *U.S. Naval Institute Proceedings* 126, no. 5 (May 2000), 60–63; Gary W. Schnurrpusch, "Asian Crisis Spurs TBMD," *U.S. Naval Institute Proceedings* 125, no. 9 (September 1999), 46–49.

[70] See Sam J. Tangredi, "The Fall and Rise of Naval Forward Presence," *U.S. Naval Institute Proceedings* 126, no. 5 (May 2000), 28–32.

[71] John P. Jumper has said, "Access is an issue until you begin to involve the vital interests of the nation that you want and need as a host. Then access is rarely an issue." Jumper quoted in "The Access

Issue," *Air Force Magazine* 81, no. 10 (October 1998), 42–46. See also "Operating Abroad," *Air Force Magazine* 81, no. 12 (December 1998), 28–29.

[72] Robert W. Chandler with John R. Backschies, *The New Face of War: Weapons of Mass Destruction and the Revitalization of America's Transoceanic Military Strategy* (McLean, VA: AMCODA Press, 1998), 199–223; Anthony H. Cordesman and Abraham R. Wagner, *The Lessons of Modern War*, Volume IV: *The Gulf War* (Boulder, CO: Westview Press, 1996), 879–915.

[73] "Given the West's still-sizable nuclear arsenal and its relatively robust capability to deal with other-than-nuclear WMD warfare, are WMD really asymmetrical to the West? So long as the West maintains its current capabilities, it seems rather unlikely that an adversary could decisively employ WMD against it." Charles J. Dunlap, Jr., "Preliminary Observations: Asymmetrical Warfare and the Western Mindset," in Matthews, *Challenging the United States Symmetrically and Asymmetrically*, 5.

[74] Robert Kupperman and David W. Siegrist, "Strategic Firepower in the Hands of Many?" in David W. Siegrist and Janice M. Graham, *Countering Biological Terrorism in the U.S.: An Understanding of Issues and Status* (Dobbs Ferry, NY: Oceana Publications, 1999), 49.

[75] Richard Danzig, *The Big Three: Our Greatest Security Risks and How to Address Them* (Washington, DC: National Defense University Press, 1999), 32–34.

[76] Based on historical survey, Stuart D. Landersman maintains that "Chemical warfare is employed [only] when there is no chance of reciprocal use." Landersman, "Sulfur, Serpents, and Sarin," *U.S. Naval Institute Proceedings* 124, no. 8 (August 1998), 42–43.

[77] USCNS/21, *New World Coming*, 141.

[78] Khalilzad and Lesser, *Sources of Conflict in the 21st Century*, 18–19.

[79] McKenzie, *Revenge of the Melians*, 3–4, 10–12; USCNS/21, *New World Coming*, 49–50.

[80] National Defense Panel, *Transforming Defense*: *National Security in the 21st Century*, December 1997, 25. Representative arguments include Chandler with Backschies, *The New Face of War*, 177–194; Raymond S. Sheldon, "No Democracy Can Feel Secure," *U.S. Naval Institute Proceedings* 124, no. 8 (August 1998), 39–44.

[81] NDP, *Transforming Defense*, 26–27.

[82] See F.G. Hoffman, "Countering Catastrophic Terrorism," *Strategic Review* (Winter 2000), 55–57.

[83] See Steve Goldstein, "Pentagon Planners Gird For Cyber Assault," *Philadelphia Inquirer*, December 1, 1999, 1; and Robert E. Podlesny, "Infrastructure Networks Are Key Vulnerabilities," *U.S. Naval Institute Proceedings* 125, no. 2 (February 1999), 51–53.

[84] A North Vietnamese commander is quoted as saying: "The conscience of America was part of its war-making capability, and we were turning that power in our favor. America lost because of its democracy; through dissent and protest it lost the ability to mobilize a will to win." From "How North Vietnam Won the War," *Wall Street Journal*, August 3, 1995, A8. For a discussion of potential future effects, see Brent Baker, "War and Peace in a Virtual World," *U.S. Naval Institute Proceedings* 123, no. 4 (April 1997), 36–40; and Michael Ignatieff, *Virtual War: Kosovo and Beyond* (New York: Metropolitan Books/Henry Holt, 2000), 191–196.

[85] Robert Callum, "Will Our Forces Match the Threat?" *U.S. Naval Institute Proceedings* 124, no. 8 (August 1998), 51–52. E. Anders Eriksson argues that "the cyber WMD problem is likely to be transitional in the sense that as information technology matures, defense will outweigh offense." Eriksson, "Information Warfare: Hype or Reality?" *The Nonproliferation Review* (Spring–Summer 1999), 58.

[86] <www.stratfor.com>, "'I Love You' and the Problem of Cyberforce," May 15, 2000, 3.

[87] William E. Pohde, "What is Information Warfare?" *U.S. Naval Institute Proceedings* 122, no. 2 (February 1996), 36–38.

[88] "Information superiority" is the term used in the 1997 National Military Strategy and *Joint Vision 2010* to indicate "the capability to collect, process, and disseminate an uninterrupted flow of precise and reliable information, while exploiting or denying an adversary's ability to do the same." National Military Strategy, 18. "Knowledge superiority" was used in a U.S. Navy briefing to describe the objective of developing network-centric warfare capabilities.

[89] Air Force Doctrine Document 2–5, *Information Operations* (August 5, 1998), i.

[90] See, for example, Owens, *Lifting the Fog of War*.

[91] Secretary of the Air Force F. Whitten Peters: "I think everyone has agreed that what we did in Kosovo was equivalent to a single Major Theater War." "Whit Peters on the Issues," *Air Force Magazine* 82, no. 10 (October 1999), 47.

[92] See Ralph Peters, *Fighting for the Future: Will America Triumph?* (Mechanicsburg, PA: Stackpole Books, 1999), 32–47; Caroline Davies, "Drinks, drugs, and terror-cocktail that turns boys into killers: Using children in combat has reached a horrifying scale in Africa," *The Daily Telegraph* (London), May 25, 2000, 4.

[93] "In our lifetimes, this morally savage, unruly killer, not the trained, disciplined soldier, will be the type of enemy most frequently encountered by Euro-American militaries." Peters, *Fighting for the Future*, 48.

[94] Testimony to the growing brutality of modern war comes from NGOs and relief agencies. Edmund Cairns, *A Safer Future: Reducing the Human Cost of War* (Oxford, UK: Oxfam Publications, 1997), has sketched a future in which the majority of wars—fought primarily in the developing world—will focus on the civilian as target, will flout the existing laws of war, and will be fought over the distribution of resources within or between states.

[95] "The U.S. Army will fight warriors far more often than it fights soldiers in the future." Peters, *Fighting for the Future*, 44.

[96] Ignatieff, *Virtual War,* 210–212.

[97] See Don Stauffer, "Electronic Warfare: Battles Without Bloodshed," *The Futurist* 34, no. 1 (January–February 2000), 23–26.

[98] USCNS/21, *New World Coming*, 143.

[99] See discussion in Anthony C. Zinni, "A Commander Reflects," *U.S. Naval Institute Proceedings* 126, no. 7 (July 2000), 34–36.

[100] Other sources include Robert F. Hahn II and Bonnie Jezior, "Urban Warfare and the Urban Warfighter of 2025," *Parameters* 29, no. 2 (Summer 1999), 74–86.

[101] The term "chaos in the littorals" is adopted from a joint U.S. Naval Institute–Armed Forces Communications and Electronics Association conference of that title held at San Diego on February 10–11, 2000.

[102] Danzig, *The Big Three*, 42–49.

[103] Danzig, *The Big Three*, 40–42.

[104] Craig Covault, "Desert Storm Reinforces Military Space Direction," *Aviation Week and Space Technology*, April 8, 1991, 42; Steven J. Bruger, "Not Ready for the First Space War: What about the Second?" *Naval War College Review* 48, no. 1 (Winter 1995), 73–83.

[105] William L. Spacey II, *Does the United States Need Space-Based Weapons?* Cadre Paper 4 (Maxwell AFB, AL: Air University Press, September 1999), 1–7, 109; Randall G. Bowdish and Bruce Woodyard, "A Naval Concepts-Based Vision for Space," *U.S. Naval Institute Proceedings* 125, no. 1 (January 1999), 50–53.

[106] See John E. Hyten, *A Sea of Peace or a Theater of War: Dealing with the Inevitable Conflict in Space*, ACDIS Occasional Paper (Champaign, IL: University of Illinois at Urbana-Champaign, April 2000).

[107] USCNS 21, *New World Coming*, 143.

[108] Spacey, *Does the United States Need Space-Based Weapons?* 107.

[109] There are also other political constraints. See Kagan, "Star Wars in Real Life," 112–118.

[110] The Honorable Sheila E. Widnall, Secretary of the Air Force, "The Space and Air Force of the Next Century," address to the National Security Forum, Maxwell AFB, AL, May 29, 1997 <www.af.mil/news/speech/current/The_Space_and_Air_Force_of.html>, quoted in Spacey, *Does the United States Need Space-Based Weapons?*, 4.

[111] Quoted in Spacey, *Does the United States Need Space-Based Weapons?* 4.

[112] In terms of the current status of the United States, see Davis and Sweeney, *Strategic Paradigm 2025*, 286–288.

[113] Seyom Brown has argued that gross imbalances in military power combined with inherently destabilizing deployments cause such competition. See Brown, *The Causes and Prevention of War*, 2d ed. (New York: St. Martin's Press, 1994), 94–98.

[114] A similar approach (concerning Russia) was suggested earlier by Fred C. Ikle, "Comrades in Arms: The Case for a Russian-American Defense Community," *National Interest* 26 (Winter 1991/92), 22–32.

[115] This is the basis behind the planning methodology known as competitive strategies. See Henry D. Sokolski, ed., *Prevailing in a Well-Armed World: Devising Competitive Strategies Against Weapons Proliferation* (Carlisle, PA: U.S. Army War College, Strategic Studies Institute, March 2000), 10–11. See also Khalilzad and Lesser, *Sources of Conflict in the 21st Century*, 19–20.

[116] One proposed approach is to allow other powers to have their own geographic spheres of influence, as suggested in James Kurth, "American Strategy in the Global Era," *Naval War College Review* 53, no. 1 (Winter 2000), 7–24.

[117] Patrick M. Cronin, ed., *2015*: *Power and Progress* (Washington, DC: National Defense University Press, July 1996), 136–137.

[118] See, for example, Paul Bracken, *Fire in the East* (New York: HarperCollins, 1999), 63–70.

[119] This view is implied by Cronin: "while American military presence overseas would retain its value, the form and context of the presence must be adapted to the shifting parameters of conventional warfare." Cronin, *2015*: *Power and Progress*, 145.

[120] "The Access Issue," *Air Force Magazine*, 42–46.

[121] Office of Naval Intelligence (ONI), *Challenges to Naval Expeditionary Warfare* (Washington, DC: ONI, 1997), 26–31.

[122] A discussion of the force structure implications for the Army can be found in Davis and Sweeney, *Strategic Paradigm 2025*, 306–313.

[123] See, for example, John Mueller, "The Escalating Irrelevance of Nuclear Weapons," in T.V. Paul, Richard J. Harknett, and James J. Wirtz, *The Absolute Weapon Revisited: Nuclear Arms and the Emerging International Order* (Ann Arbor: University of Michigan Press, 1998), 73–98.

[124] Robert G. Joseph and Ronald F. Lehman II, project directors, *U.S. Nuclear Policy in the 21st Century, Final Report* (Washington, DC: National Defense University/Lawrence Livermore National Laboratory, 1998), 1.13–1.16.

[125] See Scott D. Sagan, "The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks," *International Security* 24, no. 4 (Spring 2000), 85–115.

[126] See in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton, 1995).

[127] "Traditional methods of deterrence have inherent limitations and tend to be ineffective in countering proliferation of WMD today." David W. Siegrist and Janice M. Graham, *Countering Biological Terrorism in the U.S.: An Understanding of Issues and Status* (Dobbs Ferry, NY: Oceana Publications, 1999), 7, 18. An opposing view is implied by the discussion in Joseph and Lehman, *U.S. Nuclear Policy in the 21st Century*, 1.13, 2.40–2.41.

[128] "For example, deterrence may prove difficult against religiously-motivated terrorists who believe they are carrying out the will of their Supreme Being. The components of deterrence need to be reexamined, then refocused, with other more pertinent options added." Siegrist and Graham, *Countering Biological Terrorism in the U.S.,* 18.

[129] "If their strategy can be beaten, terrorists can be defeated." Gray, "Combating Terrorism," 20.

[130] Ibid., 22.

[131] See Mark E. Kosnik, "The Military Response to Terrorism," *Naval War College Review* 53, no. 2 (Spring 2000), 13–39.

[132] See discussion in Tangredi, *All Possible Wars?* 12–13.

[133] Davis and Sweeney maintain "that basing studies of the future security environment on such unexpected and unanticipated events ill serves the defense planner or the foreign policy professional, since it is almost impossible to prepare for such eventualities . . . . Putting aside for a moment whether or not these [wildcards] are even valid arguments, the broader point remains that such possibilities are useless to long range planning." Davis and Sweeney, *Strategic Paradigm 2025*, 218. The NDU Working Group disagreed with their conclusions and sees great value in developing hedging strategies against selected wildcards. Apparently, so do Davis and Sweeney, who later suggest that there are at least "three wild cards worth considering"; ibid., 219–221.

[134] The sources surveyed originally identified seven wildcards: (1) creation of a United Nations army; (2) Congress revises or repeals restrictions on direct military involvement in domestic law enforcement; (3) a worldwide economic collapse; (4) cascading economic disasters; (5) unexpected development of a military near-peer; (6) collapse of a key U.S. regional ally; and (7) the rise of neo-fascism or ethnic hatred as a potent world ideology. All wildcards are not of equal probability. A careful selection needs to be made as to which are best candidates for further study. Among the best guides are the degrees to which current plans could be adjusted quickly to a particular unexpected event, and the relationship between the particular wildcard and the dissenting arguments identified through the development of the consensus. Detailed assessment can be found in Tangredi, *All Possible Wars?* 119–132.

[135] Michael Pillsbury, *China Debates the Future Security Environment* (Washington, DC: National Defense University Press, 2000), xxiii.

Chapter Three

The Rise of Asymmetric Threats: Priorities for Defense Planning

by Kenneth F. McKenzie, Jr.

At the beginning of the new millennium, the United States is ubiquitous, and ubiquity brings vulnerability. Because of this, hostile nations and groups will inevitably seek ways to undermine U.S. strength by attacking its vulnerabilities. These have come to be called *asymmetric* threats. The interest of the defense establishment in asymmetric threats is a recognition of an enduring truth: weaker powers, both state and nonstate, will seek ways to mitigate the dominance of the strong.

The first task of this chapter is to define asymmetry. The proposed definition emphasizes the psychological components and disproportionate effects of asymmetric warfare. Three recurring themes are identified that give structure to the definition. First, asymmetric options are sought actively by the weaker party when there is a disparity of interest between the two antagonists. Second, the target of all asymmetric approaches is the will of the stronger opponent. Third, this is achieved through the pursuit of psychological effect on the strategic level, no matter what level of war is involved.

The second task of this chapter is to determine what the asymmetric threats are to the United States and to suggest where it should concentrate in defense planning. This requires establishing a broad typology of asymmetry. Six threats are identified: nuclear, chemical, biological, information operations, alternative operational concepts, and terrorism. Each of these is examined in-depth, across the strategic, operational, and tactical levels of war. The integration of asymmetric threats and potential U.S. vulnerabilities enables the creation of a list of the 10 most serious asymmetric threats to the United States. Identification of such a set of potential threats can give discipline to the planning process and allow for the design of appropriate counters.

The final task of this chapter is to suggest what the United States might do to improve its ability to counter asymmetric threats. The United States does not, at the present time, have a single accepted concept for how to organize for asymmetric defense, and there is little coordination between existing initiatives. A top-down, simple, and clear concept is the starting point for improvement, based on three imperatives: minimize vulnerabilities, accentuate unique strengths, and prevent disproportionate effects. Based on these three organizing ideas, recommendations are offered to minimize U.S. vulnerability to asymmetric attacks.

We define *asymmetric warfare* as leveraging inferior tactical or operational strength against the vulnerabilities of a superior opponent to achieve disproportionate effect with the aim of undermining the opponent's will in order to achieve the asymmetric actor's strategic objectives. This definition emphasizes the element of disproportionate effect—achieving strategic objectives through application of limited resources—and the explicit recognition of the importance of the psychological component. These elements are essential to considering how an asymmetric actor can achieve strategic objectives through an operation—even a failed operation—that, from the perspective of the larger power, is otherwise only a tactical attack.

Any consideration of asymmetric threats must start with the most basic asymmetry of all: disparity of interest. The greatest incentive for using asymmetric approaches rises from a real or perceived disparity of interest. A weak adversary who has a vital interest that conflicts with the nonvital interest of a strong state has the greatest incentive to use asymmetric approaches. Given the breadth of American security interests, there will be many areas of potential conflict where no vital interest is at stake for the United States, but where a regional actor has vital interests. Asymmetric approaches can work in three ways. First, they can deter U.S. entry into crises where there is no U.S. vital interest by threatening disproportionate damage to the United States. Would the loss of Seattle to a ballistic missile attack be a reasonable trade for the unconditional surrender of a hostile Pyongyang government? Absent a vital American interest, such a threat would have a powerful effect on U.S. planners. This situation is the most likely to have a positive outcome for the weaker state.

Second, if a decision has been made to employ U.S. forces in a contingency that involves a less-than-vital national interest, an asymmetric approach by an adversary that threatens to cause rapid and disproportionate effect may halt a U.S. entry or accelerate a withdrawal. If the perceived

U.S. stake is low and if it becomes apparent that involvement may become very expensive in terms of human and material cost, then a weaker state might calculate that a shocking display of force might cause the United States to recalculate the costs and benefits of engagement.

Third, an asymmetric approach may enable regional actors to pursue aggressive strategies indirectly, by making it hard for the United States to marshal the will to act. Information operations, terrorist attacks, or other unconventional approaches could make it difficult to trace sponsorship with the certainty required by the United States for action, ultimately diffusing the U.S. response until it may be too late to act effectively. To this end, regional states will work hard to manage their relationship with the United States, pursuing regional objectives while working assiduously to prevent or to minimize U.S. interference.

Asymmetric approaches can achieve powerful effect through manipulation of the psychological element. Aimed directly at the will of the opponent, they can compensate for material or other deficiencies. While the method of the approach may be tactical, the psychological effect is sought at the strategic level. This is a distinguishing feature of asymmetry: the continual focus on strategic effect by reliance on the psychological component of the approach selected. In functional terms, the target becomes the mind and in particular the will of the opponent. Asymmetric approaches have been applied on all levels of war, but the most effective asymmetric approaches seek to attain strategic effect regardless of the level on which they are applied. It follows that there may be a definitional blurring between the level of the action and the level of the effect, and, for the asymmetric actor, the goal is to produce effect on the highest possible level. The strategic level encompasses, in the broadest sense, actions taken to accomplish national-level security and foreign policy objectives. Actions on the tactical and operational level may yield strategic outcomes, the ideal objective of any asymmetric approach.

Determining effectiveness is critical in evaluating asymmetric approaches. What works and what does not work? Effective asymmetric approaches tend to have several common characteristics. From the perspective of the target, they are unexpected actions. The intuitive response may worsen the situation, while the most effective response may be counterintuitive. Effective asymmetric operations cause a disproportionate amount of damage to the target for the investment in resources, time, and money by the attacker. U.S. actions and strategic choices will drive the nature of the asymmetric threat. As the United States refines operational practices,

potential adversaries will look to find ways to counter. This process of action-reaction is inescapable.

What Are the Asymmetric Threats?

This section outlines the range of potential asymmetric threats that the United States could face through the year 2010, focusing on the general types of potential asymmetric approaches that reasonably could be expected to be employed. As stated above, it identifies a typology of six potential asymmetric threats: nuclear, chemical, biological, information operations, operational concepts, and terrorism. These six categories of threats are logical descendants of asymmetric approaches used throughout history. The greatest change at the beginning of the 21st century, however, is the dramatically increasing effectiveness of technology and its ability to create global effects from local events.

Nuclear Weapons

The ultimate expression of power in the world today is the possession of nuclear weapons. Owning nuclear weapons allows a state or nonstate actor to have a seat at the high stakes table. The former Indian army chief of staff, General K. Sundarji, is reported to have said that a principal lesson of the Gulf War is that if a state intends to fight the United States, it should avoid doing so until and unless it possesses nuclear weapons.[1]

On the tactical level, a nuclear weapon could be employed directly against maneuver or support forces in the field by short-range ballistic missile, tactical aircraft delivery, or mining or other covert means. In this context, the asymmetry of approach is principally derived from the deterrent effect that an adversary's possession of such a weapon would have on U.S. responses to crises. Actual state-sponsored use of a nuclear weapon against forces in the field is the least effective method of employment of a nuclear weapon; in fact, in many ways it is no more than the ultimate symmetric response.

Adversaries will be hesitant to employ nuclear weapons on the tactical level for several reasons. First, unless the attack is a complete strategic surprise, tactical maneuver forces can disperse rapidly, making it hard to achieve military effect commensurate with political cost. Second, it will be very easy to trace responsibility for the attack, particularly if it is delivered by conventional means. Third, use of nuclear weapons against U.S. forces would almost certainly invite a staggering response that might not stop short of the imposition of unconditional surrender. Last, adversaries

will not have many nuclear weapons, and targeting fielded forces is surely the least cost-effective method of employing them.

Nuclear weapons would have the most potential utility in the early stages of a major theater war, when they can threaten or deter U.S. deployment into a theater. They would be of less utility after U.S. forces close and the theater matures, but they would again become a significant factor in the end-state of an MTW, particularly if the adversary saw the possibility of cataclysmic defeat. In this case, the temptation would be strong to use any and all means in a spasmodic response to try either to change the tide of battle or simply to take revenge on the United States or its allies.

The use of nuclear weapons against U.S. forces on the tactical level by a rational state actor is unlikely. The tactical employment of nuclear weapons against forces in the field is not really a practical asymmetric approach. If executed, it would tend to create a case of vital national interest for the United States, where perhaps there had not been one before. The concept of disproportionality would then be turned upon its head, and high risks would be accrued by the actor with little gain. The threat of use is more problematic, although threats against fielded forces also carry many of the risks of a deterring strategy while reaping few of the advantages.

Nuclear weapons can be employed operationally against the deployment and theater support infrastructure in order to deter, slow, or even halt the deployment of forces into a theater. Attacks against fixed targets would be easier to plan and to execute than attacks against forces in the field. The advantage of employment against fixed rear-area targets is that instead of targeting the most-prepared forces (usually tactical maneuver forces that possess organic mobility), targets could be selected from forces with less protection and little ability to move.

It follows that, for a state actor, the greatest opportunity to employ or to threaten to employ nuclear weapons would be in the early stages of a conflict. The intent would be initially to deter and to complicate U.S. force deployment considerations and potentially to destroy critical infrastructure in order to prevent physical deployment. If employed early enough, they might destroy or degrade critical aerial and surface ports of debarkation before U.S. forces even arrive, creating a difficult situation for the National Command Authorities (NCA). If nuclear weapons were employed against U.S. forces, the response would clearly be overwhelming and direct, but what if they were employed against an ally, and few, if any, U.S. forces felt the results? Such a use or even its threat might make

potential U.S. allies more reluctant to participate in a coalition structure. The direct threat of nuclear employment against an ally or potential ally very early in a crisis might have the effect of dissuading that nation from participating in a coalition with the United States.

Strategic employment is the threat or the use of a nuclear weapon against the U.S. homeland. Strategic effect is sought by direct strategic attack. For a regional power or rogue state, the greatest asymmetric utility for these weapons is in their deterring effect. A demonstrated or otherwise credible ability to strike the U.S. homeland would have a sobering effect on any U.S. decisionmaker considering bombing a regional adversary's capital or even deploying forces in the face of threats or warnings when vital national interests are not at stake. The possession of nuclear weapons, and the demonstrated (or even suspected) capability to deliver them against the American homeland, could have the effect of dampening sentiment for intervention.

It is difficult to conceive of a rational actor electing to employ nuclear weapons against the United States in a direct strategic attack. To do so would invite its own annihilation. The deterrent effect of a U.S. response, however, might erode in a war in which the regional actor sees events going badly against it. If it looked as though the United States and its allies planned either to bomb a country into submission or to occupy its capital, then that country would have little to lose; in such a *Götterdämmerung* scenario, the possibility of actual use would become likely.

In an extended MTW, aggressive U.S. efforts to destroy or to neutralize a foe's nuclear delivery structure might result in another response familiar from the Cold War: a "use 'em or lose 'em" response. An opponent cannot stand to see its strategic trump card taken away. This does not imply that the Armed Forces should never attempt to do this, but it must be prepared for an adversary to use its weapons if we engage in aggressive WMD reduction during a regime-threatening war.

A threat to use nuclear weapons directly against the U.S. homeland is a powerful asymmetric measure. It achieves clear strategic effect and operates directly against the will of the United States. Such an approach might tend to make the United States rethink just where its vital national interests lie. Many of these asymmetric advantages could be lost, however, if a threat were actually carried out. A nuclear attack would provoke a powerful and unrelenting response from the United States. There is a fine line between the positive disproportionate strategic effect achievable by

the possession of nuclear weapons and the potentially disastrous consequences of their actual use against the United States.

The use of nuclear weapons by nonstate actors against the United States is the least likely alternative because of the difficulty of procuring, infiltrating, and emplacing the weapon. It is, however, a possibility and may ultimately prove the most troubling of all the strategic nuclear threats. Such an attack could be just as damaging as anything launched by a state actor, but the United States would find it difficult to establish responsibility. The threat of use of nuclear weapons thus has the greatest effect at the strategic level, although threats on both the operational and tactical levels could create similar disproportionate benefits. In terms of actual employment, the use against regional supporting infrastructures is probably the most effective; it will never be a good idea to use nuclear weapons directly against the Armed Forces or the U.S. homeland.

Chemical Weapons

Of the three types of WMD, chemical weapons are generally considered to be the least damaging. On the other hand, they are also the easiest to procure, and, if history is any guide, less stigma is associated with their use. Iraq has used them extensively against Iran and against its own Kurds.[2] As with nuclear weapons, the use of chemical weapons on the tactical level against U.S. maneuver forces—the most-ready part of the U.S. force structure—is not cost-effective. Some of the delivery complications that apply to nuclear weapons also operate here, although the use of shorter-range artillery and tactical rocket delivery may partially ease them. The application of chemical weapons against refugee or other noncombatant populations could be an attractive option to opponents because it could stress the capabilities of U.S. forces to care for themselves and for a large pool of suffering noncombatants, and thus dramatically cloud the battlefield.

The Armed Forces are generally well prepared to fight and to win in a chemical environment; this is both a legacy of decades of preparation to fight the Soviets and a function of a renaissance of tactical chemical awareness in the past 5 years. Even so, the use of chemical weapons on the tactical battlefield would tend to slow the tempo, as units are forced to don protective overgarments and to conduct chemical reconnaissance and frequent decontamination. Slowing the tempo of operations will be a key component of any attempt to counter U.S. dominance.

Allied forces may be less well prepared, and this critical weakness may be exploitable through asymmetric approaches on the tactical level. Attacks

against allied forces would require the United States to provide support for less capable forces, stretching thin its capability to provide adequate chemical defense coverage for its own forces. At the same time, an attacker might use chemicals against allies instead of against the United States, hoping to avoid a massive response, or at least to create some uncertainty about what the American response might be. Using chemical weapons against tactical U.S. maneuver forces could not change the basic dynamic of a campaign. The use of chemical weapons could only slow the pace of fighting. Employment against allied units or a civilian population that remains on the battlefield could prove to be far more effective. Such an approach might bring an adversary huge political dividends as well, if the United States were unable to correct potential deficits in allied chemical defense training and equipment rapidly or provide immediate succor to threatened civilians. This approach does promise disproportionate effect and might well achieve significant strategic effect through an aggressive information operation.

Many of the considerations regarding nuclear weapons apply also to the use of chemical weapons at the operational level. The most likely targets would be the deployment infrastructure in a theater, command and control facilities, and the combat support and combat service support infrastructure that support the operations of U.S. and allied air forces. Another potential target would be the host-nation population in the theater service area, with the intent of stressing host-nation, allied, and U.S. medical support systems as well as political unity.

Chemical weapons could play a role in strategic attack, which, as with nuclear weapons, means an attack on the U.S. homeland. While they are less lethal than biological agents and not as destructive as nuclear weapons, they are inherently more stable, an important consideration when dealing with less well-trained operatives. They can still be very effective, particularly when employed against indoor and point targets. Chemical weapons do not have the shock and horror of biological or nuclear ones, but that is a relative consideration. A few pounds of VX or Sarin in a busy subway station in New York or Washington would have a tremendous psychological effect. Perhaps the greatest distinction between chemical weapons and nuclear weapons is that tracing the origin of a strategic chemical attack may be more difficult. For this reason, the threshold of employment may be lower than with nuclear weapons.

Chemical weapons are thus the least potent of the WMD triad. They do not have the open-ended potential for disaster of both nuclear and biological weapons. They are easier to produce than nuclear weapons but

require a larger and more visible infrastructure than that required for biological agents.[3] There are precedents for their use throughout this century, which probably means that they will continue to be employed. Across the spectrum, chemical weapons offer the most asymmetric effect when employed as threats against regional allies. A regional aggressor can expect to be able to threaten the homeland of adjacent states with these weapons. Employment in this manner promises strategic effect at a relatively small cost. Even if an actor carries through on its threats to employ these weapons, it may be careful to avoid U.S. forces, which could make it harder for the Nation to respond forcefully, and possibly crumble a regional alliance.

Biological Weapons

An interesting historical parallel may be developing with the first decade of the 20th century, in which the all-big-gun *Dreadnought*-class battleship became emblematic of national power. These ships were built or ordered not only by leading powers, such as England, Germany, and the United States, but also by lesser powers, such as Chile, Greece, and Turkey, which had no obvious use for them. As the numbers of these ships grew, however, the dynamics of war at sea changed their utility, and they were supplanted by the aircraft carrier as the ultimate weapon; few were ever employed. In much the same way today, even as lesser states pursue the nuclear totem, nuclear weapons may eventually be relegated to secondary status behind biological weapons, which are cheaper, easier to move or to hide from prying inspectors and, most importantly, profoundly lethal. They can also be employed in a manner that might make it hard to trace sponsorship of an attack.

Biological weapons, like all WMD, are not very effective on the tactical level, for many of the same reasons that pertain to chemical weapons. They are even more volatile and susceptible to biodegradation and corruption than chemical agents. They are also more difficult to disperse over a wide area. The target of a tactical biological weapon attack might be inoculated against the most common agents. In short, on the tactical level, the use of biological weapons is not asymmetric warfare but rather another case of an attack against the strongest part of the defense. The same considerations that apply to the tactical use of chemical weapons apply here. This is not an asymmetric approach, although the use of biological weapons against a civilian population could create problems even more significant than those caused by chemical weapons. The medical stresses, in particular, could prove far more complex and long term.

The use of biological weapons against theater-level targets offers the most lucrative and cost-effective employment option of all forms of WMD use. Biological weapons enjoy the same deterring effect as chemical weapons on the operational level, but they can be far more potent in effect. The threat of anthrax, tularemia, or Venezuelan Equine Encephalitis, for example, against a theater aerial or surface port of debarkation that depends upon host-nation support could have a crippling effect on the flow of U.S. forces into a theater. They have the added advantage over nuclear weapons for the attacker because it would be more difficult for the United States to trace sponsorship of an attack in order to retaliate.

Many airlines, including those mobilized in support of U.S. deployments (the Civil Reserve Air Fleet), may not be able to fly into areas with reported biological weapons attacks.[4] Without them, it may not be possible to complete the deployment of U.S. forces into a theater of operations. The use of anthrax, for example, in even small quantities might cause heavy casualties and tie up medical and other infrastructure; even the hint of its use, coupled with an aggressive information warfare campaign, might greatly slow the pace of a U.S. strategic deployment.

Biological weapons offer many of the same coercing features of nuclear weapons within a regional environment. Their principal advantage for the attacker would be the potential for attack without attribution. If they were introduced by special operations forces or terrorists, then it might be very difficult for the United States to link a regional actor to a specific attack, however strong the motive and our suspicions. For this reason, they represent ideal asymmetric approaches. While the attack would be operational, the effect would be strategic.

A host of recent movies and books have highlighted the threat of strategic employment of biological weapons, and it is, with nuclear attack, at the most-dangerous end of the scale. When considered for its potential coercing or deterrent value against the United States, this threat has every advantage of the strategic nuclear threat and can be delivered in a more covert manner. For this reason, the firewall between deterrence and use may not be as strong as in the nuclear case; there may be a greater likelihood of employment.

The use of biological weapons by nonstate actors, particularly terrorists, is even more of a threat, although their use is less likely. No mainstream terrorist organization has ever elected to pursue this method of attack.[5] However, increasingly radical terrorist organizations, including those with millenarian views, may not have this restraint. It is reassuring

that the organizational skills, scientific knowledge, and cool heads (and hands) required for the conceptualization and delivery of a biological weapons attack are not normally associated with radical terrorist groups.

Nuclear and biological weapons share an unfortunate feature: they can end the world as we know it. Biological weapons are easier to produce and easier to hide than either nuclear or chemical weapons.[6] The method of attack can be secret and difficult to trace. When employed to deter potential U.S. involvement in a regional crisis, they can achieve strategic effect, and, like nuclear weapons, cause the United States to weight very carefully the costs and benefits of potential involvement. If threat fails to have its effect, then use offers the advantage of forensic ambiguity. For these reasons, in the short to mid-term, biological weapons will increasingly become the tool of choice for both state and nonstate actors contemplating asymmetric approaches. The likelihood of actual employment is higher in a regional theater of operations than directly against the continental United States, but the implicit threat of use against the continental United States as a deterring or coercive tactic will rise.

Information Operations

The modern U.S. military concept of fighting is built upon the rapid, efficient exchange of vast amounts of information.[7] In this, it mirrors the explosion of cultural and business information exchange unleashed in the last 20 years by the power of the personal computer and the World Wide Web. This global system supports not only the financial well-being of the United States, but also the operation of an increasing proportion of the physical infrastructure necessary for day-to-day life in the United States, from air traffic control to hydroelectric plant management. Allied with this is the growth of a global culture that fosters the rapid exchange of information on a vast variety of subjects. This is the environment, ripe with both promise and danger, for information operations.[8]

It is difficult for any other country to compete with the United States technologically on the tactical level. Tactical combat information systems are generally well protected and resistant to direct attack. The best asymmetric approaches will probably be passive: camouflage, clutter, and concealment techniques that will make it hard for U.S. intelligence-gathering systems to gain a clear picture of the battlespace. This could be coupled with aggressive deception operations and a psychological warfare campaign that seeks to magnify U.S. missteps. This means taking advantage of the fact that in a world of near-instantaneous global communications, a tactical event can have immediate strategic effect. Denial or degradation

of superior U.S. battlefield vision capability, coupled with relentless efforts to gain strategic effect from U.S. tactical missteps, will characterize adversary tactical information operations.

On the operational level, it will become easier to conduct computer network attack against the family of systems, both classified and unclassified, that support the U.S. deployment infrastructure because an increasing percentage of information traffic will be carried on systems external to the Department of Defense. U.S. allies and coalition partners will be at least as vulnerable. Even well-protected defense communications systems are dependent to some degree upon unclassified routing and vulnerable public domain structures.[9]

Adversaries will also target regional allies and any coalition structure with psychological operations and propaganda. When conducted in conjunction with the threat or actual use of other asymmetric approaches (such as WMD), a powerful synergy can result, linking information operations with events on the ground, whether real or imagined. Charles Dunlap has outlined an extreme but thought-provoking scenario in which a regional opponent might elect to employ nuclear weapons against its own population, blaming the United States for the attack.[10] The management of publicly released information will remain a core competency for any crisis. What people see, read, and hear both in the United States and abroad will ultimately shape their perceptions of the rightness or wrongness of the American cause.

A potential cyber attack against the U.S. homeland has probably received more recent media attention than any other form of asymmetric warfare. The United States is both relatively and absolutely more dependent upon computer systems than any other nation in the world for activities ranging from personal banking to management of highways. Some of these systems are protected, most are not, but virtually all are interlinked to some degree that increases their vulnerability.[11] Our ability to identify and to defend against these potential attacks is fragmented to some extent simply because of the scope of the threat. It may prove very hard to identify attackers, and the line between criminal activity and state-sponsored attack will be blurred.

High-Altitude Electromagnetic Pulse

Perhaps the most dangerous and misunderstood form of information warfare attack is that of high-altitude EMP: a combination of nuclear weapons and information warfare that can challenge the very heart of U.S. operational doctrine and national political stability. High-altitude

EMP results from the explosion of a nuclear weapon detonated above the earth's atmosphere, typically above 30 kilometers.[12] Apart from the fireball, blast, light, and heat, the explosion results in an EMP as gamma-ray energy is converted in the earth's atmosphere to radio frequency energy that propagates toward the earth's surface.[13]

The higher the altitude of the explosion, the less the direct blast effect of the weapon and the greater the indirect effects such as high-altitude EMP will be. Space systems are especially vulnerable.[14] A particularly ominous danger is the fact that an exoatmospheric explosion anywhere over the surface of the earth, even over the attacker's own territory, could affect satellites.[15]

Virtually all electronic systems in the United States today are potentially vulnerable to high-altitude EMP: televisions and mainframe computers, telephone systems, aircraft, and satellites.[16] High-altitude EMP can cause malfunction or device failure directly, or it can trigger the system's internal power sources in unintended ways that cause damage.[17]

Relatively little of either the commercial or the military world is effectively and verifiably protected. Within DOD, tactical military communications systems are probably the most vulnerable, followed closely by theater command and control architecture. The threat extends to tactical aircraft and, in fact, to any system that uses advanced solid-state electronics to perform basic functions. This encompasses most of the systems in the U.S. military today, from wheeled vehicles to helicopters.[18] "Quite simply, the use of commercial satellites is now so tightly woven into the fabric of our commercial and military endeavors that the consequences of the loss of these assets is unthinkable, yet such loss is a very real possibility."[19]

While the effects of high-altitude EMP may seem arcane, the Soviet Union studied it as an integral part of its strategic warfighting concept during the Cold War and devoted a significant part of its strategic order of battle to achieving decisive high-altitude EMP effects in a general nuclear war.[20] It is reasonable to assume that other nations have consulted Soviet analyses.

An exoatmospheric nuclear detonation offers a regional state the ability to apply nuclear weapons in a nonlethal application (a 20-kiloton burst at an altitude of 150 kilometers would produce no visible radiation, blast, or fire effects on the ground) that would have profoundly disruptive effects on U.S. space, air, ground, and sea operations. It could change the character of a theater war from that of a *Desert Storm* to a Verdun, from an information-rich environment to one in which intelligence would be

local in nature and very hard to pass along both laterally and vertically. Most importantly, the use of nuclear weapons in this manner potentially avoids crossing the nuclear Rubicon—a direct attack upon U.S. forces that would bring a clear, unequivocal response. A high-altitude EMP attack is a sideswipe that would force the NCA to reconsider its responses. Is an exoatmospheric nuclear explosion—in which no U.S. personnel die as a direct result—serious enough to warrant a nuclear response against Baghdad, Tehran, or Pyongyang?

Alternative Operational Concepts

In choosing not to compete directly against the United States technologically, potential adversaries may make a conscious attempt to avoid mirroring Western military organizations and approaches to war.[21] A refusal to adopt Western approaches may go well beyond questions of operational convergence and military effectiveness. The most lucrative potential approach could be to seek advantage by operating well outside the moral framework of the traditional Western approach, rejecting what the United States sees as universal norms of behavior. It might, for example, seek to exploit what is widely believed to be the extreme sensitivity of U.S. society to even minor casualties (not withstanding recent evidence that indicates this may not be so).[22]

Regional aggressors or rogue states may choose to view their populations as assets to be expended, using what has been called the "operational maneuver of starving women and children."[23] If innocent civilians are starving, left exposed to the elements, or attacked, their condition will become of intense interest to the U.S. theater commander. The regional commander in chief will have to take their well-being into account in making operational plans and to be prepared to allocate scarce assets to care for them. This will inevitably become a competing priority with ongoing military operations, because of NGO efforts and the pressures exerted by the CNN effect.

While a combination of technological approaches and innovative tactics can be used against U.S. forces, the best counter may rest in an opponent's battlespace selection. If an opponent can force the fight onto complex urban, mountain, or jungle terrain, U.S. sensors and weapons accuracy will be degraded, and the potential for U.S. casualties will rise. Choosing the right ground may well prove to be the most significant advantage available to an adversary, and U.S. forces may not be able to refuse to enter such killing grounds.[24]

Other supporting tactical asymmetric approaches might include the use of the civilian population as hostages, as human shields, and as de facto weapons with which to overstress U.S. and allied medical systems. All of these factors will tend to reduce the effectiveness of precision engagement systems, clouding the picture of the battlefield and imposing greater exposure on the Armed Forces. They create the risk of U.S. tactical mistakes, which an effective information operations campaign could then turn to great effect.

Antiaccess efforts can deter, slow, or prevent U.S. forces from entering a theater. The technologies for antiaccess are not new: they range from high-tech to low-tech, from conventional sea-based mines to shoulder-fired surface-to-air and surface-to-surface missiles. Where terrain is unfavorable and U.S. interest is only low to moderate, these approaches may gain powerful advantage. They will tend to be less effective when a vital U.S. national interest is at stake.

Antiaccess measures can be grouped into four broad and overlapping categories: deterring measures, coercing measures, antideployment measures, and anti-invasion measures. They can be either conventional or WMD. The level of U.S. national interest at stake is fundamental to analyzing antiaccess approaches. If the United States seeks access and a vital national interest is at stake, then stopping U.S. forces will be difficult. The loss of a carrier or a number of B–2 bombers, for example, might be acceptable if the objective is important enough. However, such a loss might be enough to deter the United States in situations where its interest is very low.

There is also a hidden and dangerous dynamic at work for the state that makes these calculations: a shocking and successful attack on a U.S. asset may well prove to be the catalyst that drives national interest to a far greater level than it might have otherwise been. The calculation of deterrence will be tricky for potential foes, and the risks of getting it wrong are substantial.

Terrorism

Terrorism is not a perfect fit in this matrix of threats. If terror is the means chosen by a state actor, it fits more or less into all of the previous categories. Here, however, the focus is on nonstate-sponsored groups that operate outside the framework of international relations. Their financial and scientific base will be narrower than those of state-sponsored organizations, but this is compensated for by their readiness to select more radical techniques that would be suicidal for groups linked to states.

The rise of the United States as the global lightning rod, coupled with the growing availability of weapons that promise massive and visible results with minimal outlay, means that the potential for nonstate actors to threaten use of weapons formerly reserved for states is clear and growing. The Cold War formula of the least-likely-is-most-dangerous is fast eroding, and many unsavory scenarios can be imagined that are all reasonably likely to occur.

Summing Up Asymmetric Threats

Two principal conclusions can be drawn from this examination of asymmetry. First, a number of potential adversaries are exploring strategies, the most dangerous and threatening of which are usually based on the acquisition of WMD, that may narrow certain gaps with the United States. The second observation deals with the relative importance of WMD within the typology of asymmetry. It is inviting to reduce the asymmetric argument to a discussion of the strategic WMD threat to the U.S. homeland. This is a dangerous oversimplification because, while it captures the most destructive and frightening end of the asymmetric spectrum, it also ignores a number of far more likely applications of asymmetry. Weapons—regardless of the type—are themselves of less importance than the effect they create in the mind of the attacked. There are also other ways besides WMD to achieve similar effects. We should not limit our thinking about how to defend against asymmetric approaches to an overly narrow band that encompasses only the most dangerous weapons.

What Are the Worst Asymmetric Threats?

This section distinguishes the most dangerous threats to the United States. It is difficult to plan for threats unless we differentiate between them, to lend structure and a comparative approach to asymmetric threats and heed the caution that "we should not spend more time inventing asymmetric options for other states than those states' leaderships do themselves."[25] Ten threats are identified, based on the recurring themes developed in this chapter. They are not ranked, and none is singled out as "most dangerous" to the United States; they are all dangerous. They also represent other threats that have not been included; they outline the spectrum of potential asymmetric threats about which U.S. policy decisions can be crafted.

Nuclear or Biological Attack on U.S. Soil

The first asymmetric approach considered is the threat of a nuclear or biological attack against the American homeland. Such an attack threatens the greatest damage. Possession of nuclear or biological weapons and means of delivery thus gives a regional competitor or a rogue state a credible means of influencing U.S. decisionmakers. This is true disproportionate effect. Any Presidential decisionmaking process will be constrained when an enemy possesses the credible capability to deliver a nuclear or biological countervalue attack on the United States.

Particularly under circumstances when a national interest of the United States is not unambiguously involved, this type of threat would severely compress the U.S. range of options.[26] This is a threat that operates almost purely at the strategic level of war. As a threat, this is both a highly dangerous possibility and one that is increasingly likely, and for these reasons this alternative is the only asymmetric approach considered among these ten that is based on the principle of coercion and that might not involve actual use of a weapon. It is the threat of attack that coerces or deters potential American action in this case. An actual attack would surrender many of the advantages of an asymmetric approach.

The threat of such an attack could include either covert or conventional means. Conventional means—cruise or ballistic missiles or manned aircraft—are less likely as a means of delivery for a non-peer competitor. Technological considerations alone would make it difficult to deliver such a weapon to the continental United States, and the trail back to the source would be clear and unequivocal. An alternative is the covert infiltration of a nuclear weapon or a biological weapon into a major urban center. The possibility of an irrational state actor cannot be discounted, however, when the stakes are so very high and the delivery of a small number of nuclear weapons by ballistic missiles should be considered a viable, though less likely, lesser included case of this threat.

Crossing the line between threat and actual attack would be a very dangerous step for any state. For this reason, coercive asymmetric approaches of this nature might be coupled with an intensive diplomatic campaign and information operations designed to achieve limited results below the threshold of actual use.

Information Warfare Attack

A concerted information warfare attack against our national information systems infrastructure would probably include information

management systems vital for the operation of the critical infrastructures of public safety, transportation, and banking and finance. Such an attack could run the gamut from attacks of precision disruption aimed at specific elements of infrastructure (air traffic control systems, for example) to a broadly disruptive attack based on high-altitude EMP.[27] The relative likelihood of such an attack is high, given the level of U.S. dependence upon such systems. The potential damage could be severe, but it would probably not approach the devastation possible from a nuclear or biological attack; however, a high-altitude EMP strategic attack on the United States could be devastating to the entire national information infrastructure. Because of the combination of opportunity and vulnerability, this is assessed as a very real threat whose potential scope will only grow with time. Such an attack targets the will of the United States by operating directly against the civil population. It has disproportionate effect and, if used as a threat or coercing tactic, could have many of the deterring advantages of nuclear and biological weapons.

Biological and Chemical Attacks

Biological and chemical attacks against host-nation support and alliance forces in a theater would have the dual goals of splitting a coalition and eroding national will in the United States. An attack of this nature would seek to exploit weaker elements of a coalition by attacking principally with biological and chemical weapons. The relative likelihood of this form of attack is high in an MTW environment, and the relative danger to U.S. and allied forces is high. Because of its potential effectiveness, the threat of this form of attack could also be used to coerce potential regional allies in the early days of a crisis.

Such an attack—or threat of an attack—would be directed against the weakest elements of any coalition or host nation. It would strictly avoid targeting U.S. forces and would instead be directed against the personnel who are the vital theater enablers for U.S. forces. The most lucrative form of this attack might be to target civilians crucial to offloading U.S. equipment as it enters a theater. They would not be under military discipline, would not likely have had any NBC training, nor would they have much or any protective equipment, such as the inoculations that U.S. and allied forces presumably will have had. These workers are the Achilles' heel of any theater that will require the heavy flow of U.S. forces through a limited number of ports of entry, either air or sea.

If the will of regional allies can be degraded by these threats or by actual employment, then it could have a pernicious effect on the will of the

United States to participate. A regional aggressor might achieve its goals by threats, but the line from threat to employment is easier to cross within a regional scenario and when the primary targets will not be U.S. forces.

WMD Attacks against Deployment Systems

WMD attacks could be mounted against strategic deployment systems, including air and sea ports of debarkation in theater, en-route facilities, and enabling infrastructure. The primary threat is that of chemical and biological weapons. The relative likelihood of such an attack is high in a major or near-MTW scenario. The potential for damage is high. Many of the considerations that apply to attacks on allied and coalition forces are also operative here. There are also some greater risks because in this case the attack is now being delivered directly against U.S. forces as they enter a theater.

An attack of this nature would be a central component of an antiaccess strategy that would seek to slow the arrival of U.S. forces into a theater. Chemical attacks would be the least effective but easiest to execute, while biological warfare attacks could gain high leverage. It would not take more than a very small biological attack, coupled with an aggressive information operations plan, to disrupt severely the large number of non-military enabling systems that support the deployment architecture. A lesser-included case or alternative form of attack could be the aggressive employment of conventional special operations forces and perhaps terrorists who operate against the deployment infrastructure without using WMD.

Information Warfare

Information warfare includes the threat of high-altitude EMP attack against forces in a theater. This is a potent threat across the spectrum of information operations, but the most dangerous form is the use of high-altitude EMP to degrade U.S. and allied capability to achieve information dominance. The relative likelihood of this form of attack is moderate—the technical requirements to prosecute such an attack successfully are daunting—but the danger to U.S. forces would be very high if the attack were successful.

As a general principle, offensive information warfare will grow less fruitful for an opponent as the level of warfare moves from strategic to tactical. It is harder to enter U.S. tactical computing systems, and a variety of aggressive U.S. defensive information operations will also be taking place. The use of high-altitude EMP at a tactical level, however, maximizes the advantages of disruption inherent in this weapon while minimizing the

provocation of an attack on or above U.S. soil with nuclear weapons. States that possess nuclear weapons and delivery systems will also have the potential deterrence benefit that accrues from this capability. In actual operation, however, this threat would exist below the strategic level, although favorable strategic effects could be secured by operations that follow such an attack.

Battlespace Selection

Opponents may force the United States to fight in places where its information and other forms of superiority are blunted. An opponent would seek to lengthen U.S. operations in time while maximizing opportunities for American casualties. The relative likelihood of this method of attack is high—if the terrain will support it—and the potential for danger is also high. As the world becomes more urbanized, the Armed Forces will often be forced to enter and to operate in such terrain, perhaps most of the time. The examples of Stalingrad, Hue City, Manila, and Mogadishu are clear and evident.

Antiaccess Measures without WMD

Non-WMD antiaccess measures include mines, missiles, and other tried-and-true measures to slow deployment or forcible-entry operations. The relative likelihood of these tactics being employed is high, and the potential for damage at the operational level is also high. This approach relies on legacy systems from the Cold War along with newly emerging systems to prevent the entry of amphibious, airborne, or air forces. It is a tactic that has limited opportunity for success unless applied in concert with other measures. This has the greatest chance of success in a small-scale contingency, where there is no direct U.S. vital national interest at stake.

Warrior Tactics

Fighting methods and conduct on or around the battlefield—or warrior tactics—grossly violate generally accepted norms in an attempt to shock and to disrupt an opponent. There is a growing belief, perhaps inaccurate, that the United States is uniquely vulnerable to this approach to fighting. The premium placed on force protection and a current emphasis in U.S. planning on no or low casualties tends to reinforce the attractiveness of an approach that would disregard casualties in an attempt to gain an advantage in a regional conflict. The relative likelihood of such tactics being employed is high, and the potential for damage to U.S. forces is moderate, although it is far from certain that such a primitivist approach could offset significant U.S. technological and training advantages.

Chemical Attack against CONUS

The potential for chemical attack is often left in the shadow of the biological warfare threat to the homeland, but it is a distinctly separate threat, with a slightly higher relative likelihood of being employed. It is more likely because it is easier to introduce chemical weapons into the United States than nuclear weapons, and it does not draw the international revulsion that attends biological weapons. The potential for large-scale damage to the United States, however, is low. This is a less likely alternative for state actors than for nonstate actors with limited resources and delivery alternatives.

Wildcards

The last asymmetric threat is the one that we cannot even envision: *the wildcard.* Threats will emerge that we cannot plan for. While most of them will be reactions to the specific weapons systems and operational principles the United States employs, they will take root in the fertile soil of their own unique culture and experience and may prove to be the most dangerous of all.

Addressing Asymmetric Threats

Broad disparities in level of effort, interest, and potential effectiveness mark current U.S. responses to asymmetric threats. No overarching or coherent theme ties all elements of potential asymmetric countermeasures together. This lack of a unifying theme follows from the differing definitions of asymmetry that have influenced policies. Improving our responses to the asymmetric threat must begin with adoption of a consistent philosophy of how to deal with asymmetry, based upon a consistent definition. Such a philosophy can be derived from the themes laid out in this study.

To counter asymmetric threats effectively, our policies need to reflect three interlinked concepts. First, our policies should *minimize U.S. vulnerabilities* to asymmetric attack by deterring potential attackers and by having the capability to defend successfully against asymmetric attacks on both deployed forces and the homeland if deterrence were to fail. Should an asymmetric attack prove successful, we need demonstrated competency in consequence management at home and the operational flexibility to prevail in the face of asymmetric attack on deployed forces. Such capabilities will tend to make asymmetric attacks less attractive to potential adversaries.

Second, our policies should *accentuate our unique strengths* by continuing to pursue transformation and modernization objectives such as

those expressed in *Joint Vision 2020* and its successor documents. In doing this, we must avoid overreacting to asymmetric threats. The American way of war, emphasizing speed, shock, and rapid battlespace dominance, is inherently asymmetric itself when compared to the capabilities of most potential opponents. Our way of war works, and we do not need to overcorrect in attempting to anticipate asymmetric approaches.

Third, in dealing with asymmetric threats, it will be critical *to prevent disproportionate effects*. This is the heart of asymmetric advantage, and it must be countered at all levels of war; preventing tactical and operational effects from modifying our strategies is the most important component of this approach. For the United States, disparity of interest with a broad range of potential opponents is an enduring reality. As long as we remain a global power with many strategic interests, some interests will always be less important than others. DOD must, in dealing with the issue of asymmetric warfare, ensure that U.S. foreign policy options are not artificially circumscribed by state or nonstate actors who seek, by threat or action, to impose a disproportionately high price on our continued engagement.

A number of specific actions to implement this objective are grouped under the three organizing ideas: minimizing vulnerabilities, accentuating unique strengths, and preventing disproportionate effects. When a proposed action falls partially or wholly outside DOD, this is noted. Some will require action from departments and agencies across the Federal government, as well as state and local governments.

Actions to Minimize Vulnerabilities

To reduce vulnerabilities, immediate action to reduce the direct threat of strategic attack against the American homeland is important. This might include early deployment of an effective limited national missile defense (NMD) system capable of high-confidence interception of small numbers of intercontinental ballistic missiles.[28] This would counter the threat of direct attack on the United States homeland with ballistic-missile-delivered WMD. Such a defense would limit, however, only one potential avenue of attack for an aggressor, who might still choose to employ other covert means to attack the United States with WMD.[29] A ballistic missile defense system should, therefore, be part of a comprehensive approach to strategic defense that also comprises a broad range of counterproliferation initiatives, an explicit deterrence strategy, and a variety of activities designed to prevent or minimize the possibility and consequences of a covert attack.

The United States can also reduce the threat of direct or covert WMD attack on the homeland by demonstrating a capability for consequence management. For example, under the Nunn-Lugar-Domenici program, *first responder* training could be doubled from its current level of 120 cities to at least 240 cities.[30] Larger cities may need larger teams, and perhaps more of them. The existing system for regional stockpiling of medical equipment and medicines, the responsibility of the Centers for Disease Control, could be expanded, based on updates from the intelligence community. This system could include improved methods for inventory control and contingency plans for rapid movement and concentration of these resources. Significant improvements have been made in the level of epidemiological monitoring within the United States. Such continued efforts would be helpful in more rapid detection of a covert biological or chemical attack.

Long-term DOD support for local and state agencies for consequence management (CM) can come primarily from the Reserve components, and over time, elements of the Army National Guard may be restructured to reflect this.[31] This can be accomplished by dual-missioning in the short term; ultimately, however, the requirement for WMD response and CM in the continental United States could well evolve into a primary mission for the National Guard. This is a natural choice because of the long affiliation between the National Guard and local governmental structures, and its ultimate responsibility for the defense of the United States.[32]

The capability of the National Guard to assist in routine and contingency planning for CM activities and in incident response should be enhanced. Incident response would include support for command, control, communications, and computer infrastructure, augmentation of physical security, emergency mobile medical assets, nuclear, biological, and chemical reconnaissance, and mass evacuation operations if required.[33]

The capability to deploy from the United States for some of these forces will thus become of lower priority. First call on designated elements of the National Guard force structure may eventually be linked to requirements for WMD (and other) CM within the United States, and only secondarily to any requirement to deploy on short notice in support of theater contingency plans. This will require a huge change in thinking on the part of the National Guard; it will need to reorient inward, despite resistance to this idea.

Under this proposal, the highest priority for the National Guard would be pre-attack, attack management, and post-attack CM within U.S. borders. The National Guard would still retain the ability to support

limited rotational deployments overseas in support of the active component and would still have a *strategic reserve* mission, but it would no longer be explicitly linked to short-term regional warfighting operations plans. The restructuring of the National Guard would increase the numbers of low-density, high-demand units critical to CM: chemical, medical, military police, and other combat service support capabilities.

The first step toward this end could be a detailed analysis of what would be required to make such a broad change in thinking, capabilities, and supporting structure. Such an analysis would of necessity encompass more than just the National Guard because of its growing role in rotational deployments in support of peace, humanitarian, and other operations. The increasing percentage of critical combat service support force structure embedded in the Reserve components will need to be reevaluated. The comprehensive restructuring of the Army invites a parallel renaissance in the National Guard. These changes would reaffirm the longstanding relationship between the American people and the National Guard and return something directly to the communities with which these Reserve forces are affiliated.

Specific Actions to Accentuate Unique Strengths

The United States should take immediate steps at the interagency level to improve its strategic intelligence posture that monitors the global environment and actively scouts for potential asymmetric approaches that might threaten it. This effort should go beyond traditional adversaries and examine new threats that may arise. The earlier that we can sense wildcards, the more effective our response will be. In many cases, the knowledge that we are looking and listening will itself be a deterrent.

This would require substantial retooling of our technological base for information collection as we listen to a world that is increasingly encrypted and less dependent upon broadcast signals.[34] The qualitative edge in electronic monitoring that the United States enjoyed for so long has evaporated, and we may never be able to fully recover it. The expanded use of human intelligence will only begin to fill this void.[35]

A key element of intelligence gathering is ensuring that it is ultimately disseminated to those who need it, both within the United States and among our allies. This is typically the greatest weakness of any intelligence program. Part of this expanded dissemination must be the continuous process of sharing with allies and likely coalition partners the latest available information on and counters to potential asymmetric threats. We need to take steps to assure that we will have continued access to those

areas where we may be called upon to deploy in order to deter or to fight. These might include fielding effective theater ballistic missile defense systems, both upper and lower tier, to provide high-confidence coverage of arrival airfields and ports, their associated assembly areas, airbases, critical host nation support infrastructure, and both U.S. and allied land- and sea-based forces.[36] Through military-to-military contacts with allies and potential coalition partners, we should ensure that a common competency in nuclear, biological, and chemical (NBC) protection is established and maintained and that procedures are established and rehearsed as integral parts of CINC plans for combined measures to be taken in the event of NBC attack. This should include the common provision of a single standard of prophylaxis across a combined force. We should also continue to develop the tactics, techniques, and procedures and the associated equipment necessary to ensure continued access for amphibious, air-delivered, and air forces in environments across the spectrum of engagement, from benign to forcible entry.

For air forces, such an approach would translate into a continual refinement and improvement of the ability to destroy or to degrade enemy air defenses, particularly against a foe that chooses to employ its weapons in innovative and nontraditional ways. "The SEAD [suppression of enemy air defenses] capability that we've built in the U.S. Air Force is a little bit dependent on the enemy fully utilizing his assets—if they're not emitting, then you're not suppressing very much."[37] Functionally, this means that we need to have a destruction of enemy air defenses (DEAD) capability as well as a suppression capability. We should also continue to explore the technical and tactical feasibility of extreme long-range air operations for circumstances when the threat will require distant basing.

For ground forces, the principal requirement will be the ability to conduct forcible-entry operations and subsequent logistical sustainment in extremely austere environments, potentially with an extended across-the-beach or limited airhead flow of supplies for lengthy periods. The top-to-bottom reassessment of Army organization will yield a force that is both lighter and significantly more deployable than the current one. Aside from parachute infantry and air assault forces, how this force will integrate into forcible entry operations remains to be fully resolved, in terms of equipment, doctrine, and structure.

For naval forces, the ability to defeat the mine, cruise missile, small fast attack craft, and coastal submarine threat, and to ensure safe passage for amphibious, surface fire support, and follow-on logistics ships will be paramount.[38] Mines remain the principal threat to both

warfighting and sustainment vessels, and the current program of eight antimine *assigned systems* (one submarine-launched, one surface-combatant-launched, and six helicopter-launched) will be critical in correcting this long-term deficiency.

All joint forces must also be prepared to conduct operations for extended periods of time in hazardous chemical and biological environments and to overcome this challenge through protective measures on the ground, in the air, and at sea.

In concert with industry, we should ensure that all future military and specific civil communications and satellite systems emphasize radiation-tolerant microelectronics. This would include all satellites launched by the United States, not just military-specific systems. It is not fiscally feasible to harden all, or perhaps even all military, satellites against direct (that is, kinetic or directed energy) attack, but satellite systems can have higher levels of environmental protection designed to counter high-altitude EMP. Total costs have been estimated at between 1 and 5 percent.[39] Selective retrofitting of critical U.S. theater and tactical level communications systems should also be undertaken to protect against high-altitude EMP. This cost will be significantly higher, as much as 10 percent of each program, reflecting the difficulty and greater expense of modifying existing systems. This decision needs careful study of what systems are necessary to execute *Joint Vision 2020*, which depends on the ability to share a common operational picture of the battlefield and requires assured broad-bandwidth communication.

Rejuvenating the radiation-tolerant microelectronics industry will require a significant government-defense industry partnership and efforts to make it financially attractive for nonmilitary satellites to incorporate hardening into their design. This will not be cheap since hardening requires new electronics and additional weight, which are both expensive in a system to be launched into space.

While the interagency process for dealing with the consequences of mass catastrophic terrorism in the United States has been refined and improved with the establishment of a central coordinator within the White House, particular emphasis should be placed on the nature of the support DOD will provide in such an event. This is particularly important regarding the utilization of low-density, high-demand units and equipment in the Reserve and active components, such as chemical decontamination and medical support elements that might be needed at the same time for contingencies outside of the United States. DOD should articulate explicitly how it will support the civilian government

when faced with a catastrophic attack on the United States. The time of greatest danger for an attack on the continental United States might be during a significant international crisis in which many of our forces are deployed abroad. In this instance, worst-case planning is prudent.

DOD should begin this process by ensuring that all theater contingency plans are thoroughly coordinated through the Joint Staff; that potential conflicting claims by theater CINCs and homeland defense on LD/HD assets and on stored equipment and supplies unique to catastrophic management are reconciled and prioritized; and that associated risks are assessed and articulated. This reconciliation, prioritization, and risk assessment should be articulated and agreed at the interagency level.

We should also be *red-teaming* our own capabilities so that we have an accurate net assessment of our strengths and weaknesses. This is an important effort that requires protection and continuity and should be located outside the intelligence community, although it must have strong ties to it. For such an organization to have credibility, it must possess not only analytic capabilities, but also operational respectability; it must be staffed with operators as well as analysts. It must also have access, and thus high-level sponsorship. There is a need for such red-teaming on every level: the services, Joint Staff, and combatant commands. On the Joint Staff, such an organization would be charged with review of plans and operational concepts from an adversarial, intelligence-based, and operationally validated perspective. Similar organizations might prove useful within each regional and functional combatant command. The services have strong vested interests in looking ahead at alternative futures and in continually refining their responsibilities. They should continue those efforts.

Specific Actions to Prevent Disproportionate Effect

It has been argued throughout this analysis that the ultimate goal of any asymmetric approach is to seek strategic effect against the will of the opponent. This can be achieved through deterrence or coercion, or—once battle is joined—through such approaches as warrior tactics and battlespace selection. While every action recommended to this point will tend to contribute to the reduction of this effect, the most important step that can be taken in this regard is for the leadership to explain clearly to the American people the purpose of an operation. While it has become conventional wisdom in some circles that the people of the United States will not accept even minimal casualties in military operations far from home, the truth is actually more complex. If the goals and objectives of American involvement in operations abroad are clearly and

explicitly explained, support at home is likely to be both broad and deep. Telling the American people why their fighting men and women are in harm's way will be ever more important in a world in which the hierarchy of information is getting flatter. Other advocates, perhaps unfriendly to our interests, will also be telling their side of the story. We must take advantage of every opportunity to explain what we are doing, and we must do it better than our potential opponents.

Conclusion

The proposals outlined above argue for the continuation and refinement of existing programs, and in some cases for the adoption of new ones. Some have obvious benefits but will require presidential decision (for example, the deployment of an NMD) because of the larger political and diplomatic consequences. Some will require the breaking of long-held paradigms (for example, the role of the National Guard). These will be difficult choices.

While significant sums have been spent and are now currently programmed, a decision to deploy an NMD would require significant future commitment of resources. Of lesser but still significant fiscal impact is the recommendation to improve and to protect our information architecture from high-altitude EMP. The single recommendation having the greatest potential domestic political volatility, as well as significant fiscal impact, is the recommendation to retool elements of the Army National Guard for the domestic CM threat.

The objective of these recommendations is to gain the best competitive advantage for our nation at the least cost—in human life and national treasure—in a strategic environment in which our interest in any given engagement may not be as great as our adversary's. In preparing for this environment, it is important that we do not design our responses so narrowly that we become prisoners of our own actions. For that reason, these recommendations have sought to fulfill a basic responsibility of civil government—the protection of its citizens and their property—without becoming fixated on the defense of the United States homeland as the beginning and end of the asymmetric threat. The dual objectives of protecting our citizens at home while advancing American interests abroad form the most effective possible response to asymmetric threats.

Notes

[1] From Robert G. Joseph and John F. Reichart, *Deterrence and Defense in a Nuclear, Biological, and Chemical Environment*, Occasional Paper of the Center for Counterproliferation Research (Washington, DC: National Defense University, Institute for National Strategic Studies, 1995), 4.

[2] Richard A. Falkenrath et al., *America's Achilles' Heel: Nuclear, Biological, and Chemical Terrorism and Covert Attack* (Cambridge: MIT Press, 1998), 226–227.

[3] See U.S. Congress, Office of Technology Assessment, *Technologies Underlying Weapons of Mass Destruction*, OTA–BP–ISC–115 (Washington, DC: Government Printing Office, 1993), 77–81 and throughout, for an excellent discussion.

[4] See R. J. Larsen and R. P. Kadlec, *Biological Warfare: A Post Cold War Threat to America's Strategic Mobility Forces* (Pittsburgh: Matthew B. Ridgway Center for International Security Studies, University of Pittsburgh, 1995), 12 and throughout, for an excellent discussion of the strategic mobility threat posed by these weapons.

[5] Falkenrath et al., *America's Achilles' Heel*, 46–59.

[6] Office of Technology Assessment, *Technologies*, 8.

[7] Henry H. Shelton, *Information Operations: A Strategy for Peace, The Decisive Edge in War* (Washington, DC: The Joint Chiefs of Staff, 1999).

[8] Two recent survey works on the current state of information operations are Zalmay Khalilzad and John P. White, eds., *The Changing Role of Information in Warfare* (Santa Monica, CA: RAND, 1999); and John Arquilla and David Ronfeldt, eds., *In Athena's Camp: Preparing for Conflict in the Information Age* (Santa Monica, CA: RAND, 1997).

[9] Bob Brewin, "Pentagon Hit by 'World Wide Wait'," *Federal Computer Week*, November 15, 1999, 1.

[10] Charles J. Dunlap, Jr., "How We Lost the High-Tech War of 2007," *The Weekly Standard*, January 29, 1996, 22–28.

[11] Robert T. Marsh et al., *Critical Foundations: Protecting America's Infrastructures: The Report of the President's Commission on Critical Infrastructure Protection* (Washington, DC: The President's Commission on Infrastructure Protection, 1997) (Hereafter referred to as the Marsh Report).

[12] Discussion in this section is largely based on Samuel Glasstone and Philip J. Dolan, eds., *The Effects of Nuclear Weapons*, 3d ed. (Washington, DC: Department of Defense, 1977), chapters X, "Radar and Radio Effects," and XI, "The Electromagnetic Pulse and its Effects"; and S.J. McGrath, "The Electromagnetic Pulse Environment and Its Influence on Tactical Electronic and Communications Equipment," unpublished thesis for MS in Telecommunications, Naval Postgraduate School, Coronado, CA, March 1992.

[13] Glasstone and Dolan, *Effects of Nuclear Weapons*, 515.

[14] Ibid., 518.

[15] R.C. Webb et al., "The Commercial and Military Satellite Survivability Crisis," *Defense Electronics*, August 1995, 24. Martin C. Libicki, *Illuminating Tomorrow's War*, McNair Paper 61 (Washington, DC: National Defense University, Institute for National Strategic Studies, October 1999), 14, warns that: "The few really good eyes in the U.S. space inventory may be vulnerable to attack."

[16] See Andrew Koch, "Interview: Dr. Jay Davis, Director of the U.S. Defense Threat Reduction Agency (DTRA)," *Jane's Defence Weekly*, February 16, 2000, 32: "An EMP attack 'is technically quite simple to do with a relatively crude nuclear weapon'. . . . 'If you look at the effects of that on our communications and telecommunications systems, and if you look at the more problematic effect of EMP from a high-altitude burst over U.S. forces or over part of the USA, it becomes an attractive equalizer for a less sophisticated military opponent or even a terrorist.'"

[17] Glasstone and Dolan, *Effects of Nuclear Weapons*, 520–532.

[18] See Bruce D. Nordwell, "EMP, High-Powered Microwaves Pose New EW Threat to Aircraft," *Aviation Week and Space Technology*, October 26, 1998, 68.

[19] Webb, "The Commercial and Military Satellite Survivability Crisis," 21.

[20] Ibid.

[21] See Charles J. Dunlap, Jr., "21st Century Land Warfare: Four Dangerous Myths," *Landpower in the 21st Century: Preparing for Conflict* (Carlisle, PA: U.S. Army War College, April 1998), 83–93.

[22] Peter D. Feaver and Christopher Gelpi, "How Many Deaths Are Acceptable? A Surprising Answer," *The Washington Post*, November 7, 1999, B3, describe the results of the Triangle Institute for Security Studies Casualty Aversion Survey, conducted from September 1998 through June 1999.

[23] This term was used in a briefing at Headquarters, Task Force Eagle, 1st Cavalry Division, Tuzla, Bosnia, January 1999.

[24] See Libicki, *Illuminating Tomorrow's War*, 47–50 for a thoughtful discussion of this problem.

[25] Paul F. Herman, "Asymmetric Warfare: Sizing the Threat," *Low Intensity Conflict and Law Enforcement* 6, no. 1 (Summer 1997): 180. This excellent article clarifies the conceptual underpinnings of asymmetric warfare.

[26] A good summary of this can be found in Brad C. Roberts, "From Nonproliferation to Antiproliferation," *International Security* (Summer 1993): 158: "In the United States, proliferation is likely to sharpen the debate about vital versus peripheral national interests, undermine the political support for military intervention, or even long term engagement, increase U.S. vulnerability to coercive diplomacy by regional actors, and narrow the room for maneuver in [the] international environment."

[27] E. Anders Eriksson, "Viewpoint: Information Warfare: Hype or Reality?" *The Nonproliferation Review* 6, no. 3 (Spring/Summer 1999), 57–64.

[28] Deployment decisions about what the best missile defense system would be—ground-based, space-based, in-theater (boost-phase), or post-boost-phase—are beyond the scope of this study.

[29] Two differing perspectives on the NMD issue can be found in Henry A. Kissinger, "The Next President's First Obligation," *The Washington Post*, February 9, 2000, 21; and George N. Lewis, Lisbeth Gronlund, and David C. Wright, "National Missile Defense: An Indefensible System," *Foreign Policy* 117 (Winter 1999–2000), 120–131.

[30] This program provides funds and training support to create a nucleus of local personnel able to respond effectively to large-scale consequence management contingencies.

[31] See the Office of the Secretary of Defense, *Reserve Component Employment Study 2005*, *Study Report* (Washington, DC: Government Printing Office, July 1999).

[32] This builds on recommendations in the 1997 Quadrennial Defense Review, the Reserve Component Study completed in 1999, and the 1999 Report to the National Guard Bureau Weapons of Mass Destruction (WMD) Study (Washington, DC: Science Applications International Corporation, February 1999). When in a state-supporting role, the Guard is exempt from the provisions of the *posse comitatus* statute (18 U.S.C. 1385), which prohibit Federal military forces from performing law enforcement duties.

[33] OSD, Reserve Component Study, C–1, 2. The 1999 Report to the National Guard Bureau Weapons of Mass Destruction (WMD) Study, 4, identified 141 potential support roles for the National Guard, and then refined them to "47 mission consistent potential National Guard WMD response support roles."

[34] See Seymour M. Hersh, "The Intelligence Gap," *The New Yorker*, December 6, 1999, 58–67, for a discussion of the challenges facing the National Security Agency (NSA). For example, "the North Koreans . . . have bought encrypted phones from Europe, high-speed switching gear from Britain, and up-to-date dialing service from America—a system the NSA cannot readily read." A U.S. intelligence official was quoted as saying of the North Koreans that "All their military stuff went off ether into fiber—from high frequency radio transmission to fiber-optic cable lines," capable of carrying much more traffic than any radio transmission, and not readily read by external monitoring systems. Douglas Farah, "New Drug Smugglers Hold Tech Advantage," *The Washington Post*, November 15, 1999, 1, outlines some of the encryption techniques readily available to well-funded transnational criminal organizations.

[35] Falkenrath et al., *America's Achilles' Heel*, 282–286, makes some of these recommendations in chapter 5, "Recommendations: An Agenda for the American Government."

[36] In the TMD arena, the Army PAC–3 and the Navy Area Defense systems are already budgeted.

[37] Major General Bruce Carlson, USAF, quoted in John A. Tirpak, "Dealing With Air Defenses," *Air Force Magazine*, November 1999, 26.

[38] Unattributed, "Navy Mine Warfare Official Warns 'Judgment Day' Is Coming," *Inside the Navy*, November 22, 1999, 7.

[39] Joseph C. Anselmo, "U.S. Seen More Vulnerable to Electromagnetic Attack," *Aviation Week and Space Technology*, July 28, 1997, 67.

Chapter Four

The Defense Budget: Meeting Growing Requirements with Constrained Resources

by Richard L. Kugler

Where is the U.S. defense budget headed? This chapter has a theme of impending challenge ahead. Because the globalizing world remains a dangerous and uncertain place, the United States needs to stay strong militarily, second to none. In the years ahead, the defense budget will need to grow—perhaps by more than is now realized—so that U.S. forces can be properly strengthened. But even if the budget does increase moderately, the Department of Defense will not be able to spend its way out of the mounting dilemmas facing it. Pressures for added spending are rising faster than the defense budget is likely to grow. Nor does the Pentagon have ready opportunities to cut costs for existing forces in big ways that are painless. Because DOD is not likely to get all the money it wants and arguably may need, strategic priorities will have to be set in ways that help close the widening gap between growing requirements and constrained resources.

What must be avoided is a strategy-force mismatch in which U.S. military capabilities fall far short of being able to carry out an overly ambitious strategy. Equally to be avoided is an incoherent military posture unable to execute a sound strategy that would be feasible if plans and programs were wisely prepared. In order to use resources effectively, the Department of Defense—as well as the President and Congress—will need to determine not only what the military requires, but also what it can do without. The emerging situation calls for a careful examination of *tradespace*: the realm where difficult yes and no decisions are taken, some

improvements are pursued rather than others, and shortfalls are accepted when the risks are deemed tolerable.

After outlining the strategic context for shaping the U.S. defense budget, this chapter describes current and potential future budgets. Next, it sketches the internal components of the defense budget, including spending on services, programs, and line-item activities. It then explores in more detail where pressures will arise for more spending in such areas as military personnel, operations and maintenance (O&M), procurement, international operations, and conventional force structure enhancements. The analysis concludes by discussing how these growing pressures add up to significant challenges ahead for both the overall size of future defense budgets and their internal priorities. By providing an overall framework, this chapter helps set the stage for the chapters that follow, which address the detailed issues surrounding analysis of alternative strategies, forces, and programs.

The Strategic Context

For the past 8 years, U.S. defense preparedness policy—that is, the building of forces as opposed to using them in crises—has been humming along quietly, not attracting much public attention. The Pentagon has been busily crafting new doctrine and upgrading its forces in low-visibility ways. But because a broad public consensus existed on military affairs and because defense budgets were not rising, DOD actions did not trigger the intense political struggles that swept over such domestic issues as deficit reduction, taxes, and social policies. This tranquil setting is now mutating, not only because of changes taking place in U.S. military forces, but also because the still-turbulent world is producing new dangers and requirements. In the coming years, defense spending is likely to reclaim its old place as a controversial issue in national political life.

U.S. forces thus far have been able to handle today's peacetime missions, crises, and wars. But they have been stretched thin by their heavy load of overseas engagement missions, peacekeeping, minor and major crisis interventions, and staying prepared for two regional wars in overlapping time frames. In the coming years, the strategic demands on them could even increase. A short while ago, the principal concern was the distant future of 20 years from now, when new and well-armed adversaries could appear. Lately, concern has been shifting to the mid-term, 5–10 years or less, when new, hydra-headed threats seem capable of gaining strength. The U.S. military's need to remain effective in the near term,

while upgrading for the mid-term and preparing for the long haul, further complicates defense planning today.

As a result, the U.S. defense budget has been rising lately. The political debate now starting to sweep over the larger security community is a reflection of the internal struggle within DOD over how best to use scarce resources in order to meet future needs, a struggle that promises to get worse before it gets better. During the Cold War before the Reagan buildup, there were great battles over strategy and resources. Today's situation is not as stressful. But the Pentagon already is laboring with the task of keeping its forces ready, carrying out new missions abroad, handling a rising tempo of operations, dealing with an aging infrastructure, reforming its business practices, paying its military personnel adequate salaries, adopting new doctrines, and carrying out the final stages of R&D on a new generation of weapons. As these new weapons enter production, they will elevate needs for procurement spending. Beyond this, entirely new strategic requirements are arising. National missile defense may be needed in order to defend against proliferating weapons of mass destruction. U.S. conventional forces may require changes in their size and configuration so that they can perform new missions. These and other new requirements will place further upward pressures on the defense budget.

In theory, this troublesome situation could be resolved by increasing the defense budget by large amounts. In order to close the widening gap between existing resources and plausible needs, a common estimate is that the annual defense budget could be increased by $10–20 billion today and by $30–50 billion above official forecasts in a few years. Some analysts are citing a need for even bigger increases. Perhaps the defense budget will grow beyond current plans, but most likely not to that extent. Regardless of the outcome, DOD will need to extract the maximum mileage out of the resources available. Above all, it will need to preserve a coherent military posture. It cannot afford to pursue so many new initiatives in such uncoordinated ways that its forces are left in tatters, partially able to do many things, but adequately effective at few of them.[1]

Current Budget and Future Topline

When President John F. Kennedy entered the White House 40 years ago, he instructed his Secretary of Defense to find out what the United States needed to defend itself, and to buy it at the lowest possible cost. His guidance aptly framed the dilemma that has bedeviled presidents since then: how can the United States not only build an effective defense posture,

but do so in affordable ways? Although the Cold War has given way to a new era of accelerating globalization and complicated security affairs, this dilemma remains alive today. Indeed, it has become even tougher because the new era is so murky and uncertain.

Defense planning would be easy if the task was simply to identify a theory of requirements and then tailor the budget to fulfill it. But requirements are not easy to pinpoint. Moreover, the issue is seldom meeting requirements fully or neglecting them wholly, but instead deciding upon how much defense capability is enough and how many risks can be accepted. Military effectiveness must be considered, but so must costs even when high preparedness is the standard. Difficult judgments must always be made about how to strike a reasonable balance between being adequately prepared and spending money that does not grow on trees.

As in past eras, today's search for a reasonable balance takes place within the framework of basic policy decisions made by the President and Congress. Today's dominant national goals abroad are to create a stable security system in which American interests are protected, to build a vigorous world economy in which the United States can prosper, and to promote democratic values where possible. To help achieve these goals, current national security strategy is one of global engagement, animated by the precepts of shaping the international environment, responding to crises, and preparing now for an uncertain future. National military strategy for supporting these precepts is anchored in a combination of overseas presence and swift power projection. To carry out this strategy, U.S. defense planning calls for sufficient forces to wage two nearly concurrent MTWs, while flexibly using these forces for a wide variety of additional purposes in peace, crisis, and war. This planning framework creates the need for today's force posture of 13 active Army and Marine divisions, 20 Air Force fighter wings, 12 carrier battle groups, plus sizable mobility forces, logistic support units, Reserve component forces, and other assets. These forces, in turn, give rise to today's DOD manpower totals of 1,380,000 active troops, 865,000 Reservists, and 700,000 civilians.[2]

These policies are not immutable, but a stance of high military preparedness is likely to be adopted by the Bush administration. The current force posture, or a similar posture, will require a large defense budget to support it. But exactly how large a budget, and how should it be spent? Because this question can be answered in different ways, it lies at the core of the mounting debate over the size and directions of the U.S. defense effort.

The Clinton administration answered this question in ways that gradually shifted during its 8-year tenure. Its first major study of defense policy was the Bottom-Up Review of 1993. Reacting to the Base Force inherited from the Bush administration, the review called for a somewhat downsized but adequate defense effort for the post-Cold War era. It adopted the two-MTW concept, reduced force levels by 10–15 percent, and charted a course of gradually declining budgets that fell to $251 billion by 1994 and then leveled off at $255–258 billion over the next 3 years. The next major study was the Quadrennial Defense Review (QDR), issued in mid-1997. It unveiled the new strategy of "shaping, responding, and preparing," and grappled with the dilemmas over priorities and new requirements beginning to infect the defense budget. Its central decision was to strike a balance between the near-term dictates of keeping large and ready forces, and the long-term pursuit of modernization in carrying out a revolution in military affairs and the new military doctrine set forth in *Joint Vision 2020*.

By early 1999, the administration had decided to fund somewhat larger defense budgets. Accordingly, Secretary of Defense William Cohen announced that $112 billion would be added during 2000–2005. Of this amount, $84 billion came from actual topline increases, and the remaining $28 billion was savings from lessened inflation, lower fuel prices, and other adjustments. Cohen's plan for the increase called for spending $35 billion on military personnel, $49 billion on O&M, and $28 billion on procurement. Most of these funds were to be provided in 2002–2005, but some were added to DOD budgets for 2000 and 2001. These two budgets halted the decade-long decline in real defense spending and started restoring a measure of growth.

The context for spending increases now in train is seen in table 4–1, which shows historical trends in budget authority from 1985 to 2001, in both current dollars—the money actually budgeted each year—and constant dollars, a figure that removes inflation and therefore is a better measure of the real value of each budget in today's dollars. The DOD budget fell by only 12 percent from 1990 to 1998 in current dollars, but in constant dollars—real purchasing power—it declined by about 28 percent (while DOD manpower shrank by a similar amount). The stable current-dollar budgets of the mid-1990s thus were being slowly eroded by inflation. It was this steady downward trend that Cohen's increases were designed to start reversing.

Table 4–1. Defense Spending Trends (Budget Authority)

	(billions of dollars)							
	FY85	**FY90**	**FY96**	**FY97**	**FY98**	**FY99**	**FY00**	**FY01**
Current Dollars	286.8	293.0	254.4	258.0	258.5	278.4	279.9	291.1
Constant (FY01) Dollars	436.4	382.5	284.5	282.4	277.2	292.6	287.8	291.1
Percent Real Growth Constant Dollars	6.3	–2.1	–2.6	–0.7	–1.9	5.5	–1.6	1.1

For more detail, see *Annual Report to the President and Congress, 2000* (Washington DC: Government Printing Office, 2000). Budget figures for 2001 reflect DOD requests as of mid-2000. Subsequent Congressional decisions have altered these figures in small ways.

Table 4–2 portrays how future defense budgets may unfold as a function of alternative funding strategies. It first displays projections for 2001–2010 if the defense budget grows by only enough to offset inflation rates of 2.5 percent annually, thus providing no real growth. It shows that budget would grow to $328 billion by 2006 and to $362 billion by 2010. But in real terms, the Pentagon would get no additional funds for new measures. This projection accords closely with official DOD estimates. Table 4–2 also shows how the defense budget would grow if it receives inflation offsets plus annual real growth of 1 percent or 2 percent. At the bottom, the table shows the range of added funds, above inflation, that would be received if real growth strategies of this sort are carried out each year for the coming decade.

Table 4–2 illustrates that annual real growth rates of 1–2 percent would provide added funds that are relatively small at first and then grow slowly as the decade unfolds. Whereas the annual defense shortfall could rise to $30–50 billion by mid-decade, this budget would provide enough extra funds to cover this shortage only late in the decade, and only if the shortage itself does not grow further by then. The key point is that if modest annual growth rates become politically feasible, they can provide valuable additional funds. But unless they are accompanied by a substantial step-level increase in the next few years, they will not resolve defense budget dilemmas and the need to confront strategic priorities any time soon.

Future defense spending will depend upon decisions taken by the incoming administration and the Congress, and thus could be different

Table 4–2. Defense Spending Projections (Budget Authority)

	(billions of current dollars)					
Funding Strategy	**FY01**	**FY02**	**FY04**	**FY06**	**FY08**	**FY10**
Annual Inflation Offsets (No real growth)	291	298	313	328	345	362
Annual 1% Real Growth	291	301	322	345	369	395
Annual 2% Real Growth	291	304	331	361	394	429
Added Funds from Real Growth	0	3–6	9–19	17–33	24–49	33–67

For official long-range budget projections and other details, see *Budget of the United States Government* (Washington, DC: Government Printing Office, 2000). Useful procurement budget estimates are provided in a study released by the Congressional Budget Office, *Budgeting for Defense: Maintaining Today's Forces* (Washington, DC: Government Printing Office, September 2000).

than projected here. In some quarters, calls are being heard for bigger defense budgets than now planned. But there are countervailing calls for employing the federal surplus for other purposes, including tax cuts and domestic programs. Defense spending seems unlikely to be reduced, but barring an international downturn, a major buildup similar to that of the Reagan years seems equally improbable. In Congressional hearings, the Senate and House Armed Services Committees added $4.5 billion to the Clinton administration's request for the 2001 defense budget. While this is a significant amount, it is not Reaganesque. The idea of vastly bigger defense budget hikes gained little traction in the 2000 presidential campaign. Both candidates spoke in decidedly more moderate terms, and their stances resonated in public opinion polls. The reality is that while the American public wants a strong military and accepts current defense budgets, it is not clamoring for a big, expensive buildup. Complaints about budget shortfalls are being voiced mostly by defense specialists, not by a public gripped with fear of enemies on the march.

The exact dimensions of future budgets are uncertain, but unless the current political climate changes, fully 90 percent or more of the funds likely to be available to DOD have already been planned. As yet, further real increases are a vision, not necessarily a reality. Even if such increases become available, DOD will need to spend its money wisely, for success at this enterprise will have a big impact on determining U.S. defense preparedness and combat power in the coming decade. Additional funds could help

lessen shortfalls and dilemmas. But they will not alter the imperative for an intelligent setting of priorities.

Internal Composition of Defense Budget

Analyzing how the defense budget is spent can best begin by addressing its internal composition: the multiple ways in which its funds are allocated. Doing so helps answer a larger strategic question seldom asked in the debate today: why is the budget as big as it is? After all, the U.S. defense budget is far bigger than any other in the world—in many cases by a factor of four or more, even though the active U.S. military posture of 1.4 million troops equates to only about 7 percent of the 20 million troops under arms worldwide. Whereas the United States now spends about $290 billion on defense each year, its European allies spend only $170 billion for a much larger posture of 2.3 million troops. On a per-capita basis, the United States spends nearly $200,000 per active troop each year, but the Europeans, who may underfund their budgets but take defense seriously, spend only $66,000. The same disparity holds true, only more so, when the U.S. defense posture and budget are compared to other regions. Why so much DOD money for so few forces?

One reason is strategy. The United States has a demanding global defense strategy, which dictates hefty requirements for a wide spectrum of capabilities. Because most countries focus only on their borders or local regions, they are able to deploy a limited set of assets, which keeps costs down. For example, Germany needs a large army and air force, but not a blue-water navy, or a nuclear posture, or big transport forces. Its ability to focus and specialize allows it to get by with low spending. Most other European countries are similarly situated; the partial exceptions are Britain and France, both of which have large defense budgets by European standards. The United States, in contrast with the European norm, must maintain many different types of forces: still-sizable nuclear forces, large mobility forces, strong ground and air forces for continental operations, powerful carrier and amphibious forces for maritime operations, advanced command, control, communications, computer, intelligence, surveillance, and reconnaissance (C^4ISR) systems, big overseas bases and facilities, and a diverse domestic infrastructure able to support swift power projection abroad. Each of these components must be highly capable in itself, while all of them must be able to work closely together. This sophisticated posture yields a requirement for many different types of weapons,

equipment items, training regimens, and operational practices. Nearly all of them are expensive in ways that propel the defense budget upward.

The other reason is the U.S. emphasis on high quality. Precisely because U.S. forces are not overpoweringly large, they must rely on superior quality to defeat enemies, who often possess numerical superiority, in a wide variety of distant locations and difficult terrain conditions. Contributing importantly to high quality is the U.S. practice of relying on a professional and all-volunteer force, which produces skilled military personnel but is expensive. Most active-duty combat forces are kept at full manning and high readiness so that they can deploy quickly and fight immediately. They also train a great deal, considerably more than other militaries, which permits them to carry out modern military doctrines that are key to high combat effectiveness. Their technologies, especially their weapons, munitions, and information systems, are the most sophisticated in the world. They also are provided large and multifaceted logistic support assets plus extensive stocks of ammunition, fuels, and other supplies that give them firepower, tactical mobility, and endurance. This combination of readiness, modernization, and sustainment has a synergistic effect in producing the highest quality forces in the world, but it comes at the price of big defense budgets.

The important roles played by global strategy and high-quality forces dispel the accusation that the defense budget is large simply because of duplication, redundancy, and waste. No large and complex bureaucracy is perfect; but even so, DOD is among the best-managed departments in the U.S. Government or anywhere else. Forty years of management efforts by civilian and military leaders have been devoted to economizing, trimming unnecessary assets, and consolidating forces. The biggest and easiest gains in these areas have already been realized. The process of streamlining continues today with efforts to close surplus bases, adopt modern business practices, and redesign logistic support assets. Critics sometimes accuse the Pentagon of fielding multiple armies and air forces, but its tri-service structure helps promote strength through diversity. In aggregate, today's military forces reflect the requirements of national strategy, rather than exceed them. Because this is the case, the accusation of widespread duplication misses the mark.

The defense budget is best seen as a direct product of conscious strategic choices, not an unchecked bureaucracy at work. Today's budget is made possible by a booming U.S. economy that permits spending nearly $300 billion annually on defense by allocating a historically low

share of GDP to the enterprise. The problem of rising pressures for more defense spending cannot easily be resolved by some wholesale paring away of outdated military assets that no longer make sense in today's world. Most of the drawdowns made possible by the end of the Cold War have already been taken. This does not imply that DOD budget and force structure are immutable; continued economizing steps make sense. But major reductions could be made only by paring U.S. defense strategy or reducing the quality of U.S. forces, both of which would entail important sacrifices in preparedness. This, at least, is the judgment of the U.S. Government to date. Because the task of managing the defense effort is truly complex and difficult, the choices ahead do not promise to be easy.

Spending on Services and Programs

The combination of a global strategy and high quality helps create the distinctive pattern of U.S. defense spending, in which large funds are allocated in multiple directions on behalf of many different activities. This pattern starts becoming evident when service shares are examined. As table 4–3 shows, the Army gets about 25 percent of today's budget; the Navy, 31 percent; the Air Force, 29 percent; and DOD agencies, 15 percent. These shares are similar to the mid-1980s and earlier. The only major shift has been transfer of some funds to DOD agencies, mostly a reflection of consolidating common activities.

Surface appearances suggest that the Army receives less funding support for its forces than the other two services. With a roster of 480,000 active soldiers, the Army has one-third of DOD manpower but receives only one-fourth of the budget. To a degree, this pattern reflects the higher cost of Navy and Air Force equipment; the Army is less technology-heavy. Even

Table 4–3. Service Shares of Defense Spending (Budget Authority)

Service	Share of Budget in FY00 (billions of dollars)	Percentage of Budget			
		FY85	FY90	FY95–FY99	FY00
Army	69.5	26	27	25	25
Navy	87.2	35	34	31	31
Air Force	81.2	35	32	29	29
DOD Agencies	41.9	5	7	15	15

so, the reality is more complicated. The Navy share includes the Marine Corps, which costs about $10 billion annually, and whose three active divisions provide one-fourth of U.S. active land forces. The Air Force and Navy are also largely responsible for such national assets as nuclear forces, C4ISR activities, and strategic mobility. When funds for these measures are set aside, the accurate conclusion is that DOD spends fairly similar amounts for the key combat forces and support assets of all three services. The outcome is a joint posture with balanced strength in all components, but it also makes the defense budget diverse and complex.

The complexity of the defense budget becomes further evident when spending on multiple programs is examined, as shown on table 4–4. The budget is composed of 11 programs. For simplicity's sake, the following chart shows nine: it displays the new special operations forces program as part of general purpose forces, which includes main conventional units such as divisions, fighter wings, and carriers. Table 4–4 also displays the low-cost SOON program (support of other nations) as part of administration.

A common public impression is that the general purpose forces account for the bulk of defense manpower and spending. In fact, they consume only about 50 percent of manpower and 37 percent of spending, slightly over $100 billion each year. The other eight programs account for fully 50 percent of DOD manpower and over 60 percent of spending. They average about $24 billion apiece, but they vary greatly in size. Whereas the "training, medical, and OGPA [other general purpose activities]" program costs nearly $45 billion, the strategic mobility program—a bargain, given its contribution to swift power projection—costs only about $11 billion. Reserve forces are often criticized for their large manpower and uneven readiness, but they come at a relatively low cost: they provide nearly 40 percent of mobilizable military manpower, plus key assets, for only 8 percent of its budget.

Recent years have shown important trends in funding for these programs. Whereas the strategic forces have shrunk to 3 percent of the budget, the percentage share for intelligence and communications has nearly doubled, to 11 percent of the total. Smaller variations have occurred in other programs: some have grown at the margins, and others have declined in similar ways.

Notwithstanding these changes, the overall picture for the program budget is one of continuity. During the Cold War, DOD spent 50–55 percent of its budget on the four principal programs for combat forces:

Table 4–4. Defense Spending by Category (Budget Authority)

Program	FY00 (billions of dollars)	Percent of Budget				
		FY80	FY85	FY90	FY95	FY00
Strategic Forces	7	7	9	7	3	3
General Purpose Forces	103	35	38	35	35	37
C^3I and Space	32	6	9	10	12	11
Mobility Forces	11	2	2	2	4	4
Guard/Reserve Forces	23	6	5	6	8	8
Research and Development	27	8	9	10	10	10
Central Supply and Maintenance	18	10	9	7	7	6
Training, Medical, and Other General Purpose Activities (OGPA)	45	21	12	14	17	16
Administration and Support of Other Nations (SOON)	13	2	2	4	4	5

Source: Author's estimates based on multiple sources.

nuclear forces, general purpose forces, mobility forces, and Reserve forces. Today it still spends roughly 50 percent on these programs. By comparison, the Pentagon spends about 50 percent of its budget on the other five programs that provide various types of support activities. Support, however, comes in various guises, many of which provide teeth rather than tail. For example, the C^3I and space program provides support that is critical to combat operations: this program has grown in importance because its high-technology assets enhance the warfighting strength of Armed Forces. The R&D program creates the weapon systems of the future. The other three programs provide domestic infrastructure and logistic support that have less immediate bearing on combat power, but they play major roles in training and supplying U.S. forces. They cost about $76 billion, or 26 percent of the defense budget. The large size of these programs reflects the need to preserve adequate assets in key support areas even as manpower and combat forces are downsized. DOD has succeeded in preventing these programs from

growing larger, preserving the current portion of funding for its all-important combat forces.

This brief look at defense programs helps illuminate some key points about defense spending. Pressures for increased spending come not from just one source but from several. The natural instinct in all programs is to seek ways to improve effectiveness, or at least to replace outdated assets with new systems. The combined effect of improvement activities in all programs can create pressures for bigger defense budgets even when no new threat looms. Equally important, these programs make it hard to reduce the defense budget in major ways by making cutbacks in only one area. A 20 percent cut in a single average program of $30 billion could greatly weaken its performance, yet would yield only a 2 percent savings in the defense budget. As a result, big savings would require cutbacks in multiple programs, all of which have good reasons for their current activities. This reality dampens the incentive for major cuts in key combat forces, namely, the general purpose forces. Some critics, for example, argue for a 10 percent cutback in divisions, fighter wings, and carriers in order to generate savings for other activities, including research and development. But even though this defense program is the biggest, such a cutback would reduce overall defense spending by 4–5 percent or less. Is an annual savings of only $10–15 billion worth the damage that could be done to U.S. defense strategy and warfighting capacity by reducing a force posture that already is barely adequate to meet the requirements of the regional commanders in chief? In past years, the answer to this perennial question has been clear. If savings are needed, the best way is to seek them from every defense program. Small savings in one program matter little, but similar savings in all of them can add up to something major.

Rising O&M Spending, Falling Procurement

A picture of greater change appears when defense budget line items (functional categories) are examined. As table 4–5 shows, spending on military personnel has remained fairly constant since 1990: 26–28 percent of the budget. The shares devoted to research, development, technology, and engineering (RDT&E) and to construction, housing, and other also have remained mostly constant. By contrast, spending on O&M has shot upward, and procurement spending has plummeted. In 1990, O&M and procurement consumed equal shares of the DOD budget, about 30 percent apiece. In 2000, O&M consumed 38 percent, and procurement less than 20 percent. The widening gap between them is important and merits a discussion of its causes.

Table 4–5. Trends in Line-Item Spending

	FY01 Budget (billions of dollars)	Percent Distribution				
		FY80	FY85	FY90	FY95	FY00
Military Personnel	76	30	24	27	28	26
Operations and Maintenance	109	33	27	30	37	38
Procurement	60	25	34	28	18	19
RDT&E	38	10	11	12	14	14
Construction, Housing, and Other	8	2	4	3	3	3

Today's O&M spending is big not only in relative terms, but in absolute terms as well. In constant dollars, DOD in 1990 spent about $57,000 on O&M per active-duty servicemember. Today, it spends about $79,000 per individual: an increase of nearly 40 percent. The oddity is that whereas the forces of 1990 were widely praised for their high readiness, today's forces are often faulted for shaky readiness. Thus, the upsurge in per-capita O&M spending since 1990 apparently has not produced a parallel upsurge in readiness. Nor is this O&M increase due solely to recent peacekeeping and crisis operations; because these operations currently cost about $4 billion annually, they account for only a small portion of the $30 billion difference between today's O&M budget of $109 billion and the lesser amount that would be funded at 1990 per-capita rates: $79 billion. Nor are the alleged fast-paced operations of today's combat forces the sole contributor: the general purpose forces consume only 32 percent of the O&M budget, which is less than their 38 percent share of the entire DOD budget. What then is the cause? Why has O&M shot upward to become such a large spender?

Multiple factors seem to have been at work. The upsurge results partly from high-level decisions in recent years to strengthen readiness, which was slipping in key ways. The result has been more funds for peacekeeping and crisis operations, high operating tempo, new training regimens, and increased spending on stocks, spare parts, maintenance backlogs, and other aspects of matériel readiness. But the upsurge also

results partly from deeper dynamics embedded in the O&M account. The O&M budget funds DOD civilian personnel, which cost over $40 billion, and the rest is distributed among 31 separate line items in the defense program. Combat forces aside, other programs are big O&M spenders. Evidently O&M costs in several of these areas, which often escape public notice, have been rising.

Many other unseen dynamics have pushed O&M spending higher. Today's modern weapons often cost more to operate, maintain, and repair than earlier models. For the Army, O&M costs for the Abrams tank and the Bradley infantry fighting vehicle are about double that of their predecessors. For the Air Force, O&M costs for the F–15 and F–16 are less than earlier models, but costs for the B–1 and B–2 bombers are more. For the Navy, modern carriers are cheaper to operate, destroyers cost about the same, cruisers are more expensive, and O&M costs for combat aircraft cost 30–50 percent more than earlier models. The meteoric rise in care costs across the United States has also been felt in DOD. Also contributing to bigger O&M budgets have been expenses for environmental cleanup, repair of aging facilities, expensive fuels, educational and training programs, assets for child development and family centers, contractor support, and many similar activities that are small in themselves but add up when counted together.

Thus far, few public complaints have been voiced that rising O&M costs are crowding out spending on other programs. But with pressures growing for military pay raises and bigger procurement budgets, such complaints seem inevitable if O&M expenses continue rising. Although DOD voices the expectation that future O&M budgets will rise only due to inflation, recent trends are a cause for concern that this goal may be hard to achieve. Conversely, today's large O&M budget is a potential target for savings in order to generate more funds for procurement and other measures. Perhaps efforts to consolidate and streamline far-flung O&M activities can generate such savings. DOD would seem well-advised to devote careful attention to its O&M budget in the coming years. Traditionally, other more glamorous programs have captured the lion's share of high-level attention. But O&M spending has grown to the point where it can no longer be taken for granted.

The decade-long downswing in procurement spending, and its recent upswing, can be more readily explained in terms of a single strategic cause. The Reagan defense buildup of the 1980s resulted in a major upsurge in procurement spending in order to buy a new generation of

weapon systems for all three services. When this effort was complete, DOD was able to go on an extended procurement holiday. DOD spent significant funds on RDT&E for future weapons, but it no longer had to buy large numbers of Reagan-era models. In 1985, the height of the Reagan buildup, procurement spending was fully 34 percent of the budget. In 1990, it stood at about 28 percent. By mid-decade, it had plummeted to less than 20 percent. Table 4–6 shows trends for procurement spending in current and constant dollars.

The procurement budgets of the mid-1990s hovered at $40–45 billion. Most of the funds were used to buy such secondary items as trucks and other vehicles, logistic equipment, spares, replacements, stocks, munitions, and other materiel. Few funds were allocated to buying new weapon systems. In 1997, for example, only about $12 billion was spent on procuring new weapons or upgrades for all three services. In these years, the Navy bought some new ships, and the Air Force some new aircraft. But overall, the pace of acquiring new weapons was far slower than in earlier years. This pattern of using available funds mostly to maintain the existing inventory, rather than to modernize with new weapon systems, prevailed throughout most of the 1990s.

The procurement budget is now headed back upward for the simple reason that the holiday of the 1990s is coming to an end. The Reagan-era weapons are approaching the ends of their life cycles, and new weapons are poised to begin emerging from the RDT&E process, ready for procurement. This especially is the case for air forces, but to a lesser degree it also is true for naval and land forces. In response, the DOD procurement budget rose from $47 billion in 1998 to $55 billion in 2000. Of these funds in 2000, $22 billion were earmarked for the Navy and Marines; $19 billion for the Air Force; $9 billion for the Army; and the remainder across DOD as a whole. For 2001, DOD requested a larger procurement budget of $60 billion, with even bigger budgets to come later.

Table 4–6. Trends in Defense Procurement

	(billions of dollars)					
	FY85	**FY90**	**FY96**	**FY98**	**FY00**	**FY01**
Current	97	81	42	45	54	60
Constant	138	98	45	47	55	60

This infusion of extra procurement funds is allowing the services to accelerate their acquisition of new weapon systems, munitions, and other hardware. In 2000–2001, the Army is upgrading its tanks and infantry fighting vehicles; improving its attack helicopters; and acquiring missiles, ammunition, C^4I systems, and logistic support vehicles. The Navy is buying a new CVN–77 aircraft carrier, 3 DDG–51 destroyers, 1 attack submarine, 2 LPD–17 landing ships, 20 V–22 Osprey aircraft, and 42 F/A–18 E/F fighters. It also is remanufacturing the AV–8B aircraft, and acquiring new helicopters, missiles, and C^4I systems. The Air Force budget includes funds for 30 F–16 aircraft for defense suppression roles, initial production of F–22 fighters, 1 E–8C JSTARS aircraft, 12 C–17 transport aircraft, unmanned aerial vehicles, and missiles and munitions, such as the AIM–9X air defense missile and several new ground attack weapons.

The procurement budget seems destined to continue growing in the coming years in ways that will permit faster acquisition of new weapons, munitions, and other systems for all three services. DOD envisions the procurement budget rising to about $70 billion in 2005. If so, it will consume about 22 percent of the budget. But this share will still be low when compared to past periods of intensified procurement. How much further will the procurement budget need to rise by then and afterward, when new weapons start entering the inventory in large numbers? Only time will tell, but the effect will be to complicate defense planning further.

Growing Pressures for New Defense Spending

In the coming years, the DOD budget is likely to be subject to pressures for new defense spending from numerous quarters. In order to continue funding the current military posture, spending for military personnel, O&M, construction, RDT&E, and procurement may need to increase beyond current projections. In addition, new policy and strategy goals may call for strategic departures in several areas, for example, ballistic missile defense, international operations, and conventional force enhancements. These multiple pressures, combined with projections of only modest growth in defense spending, are the core reason for concern about a widening gap between resources and requirements that could rise to $30–50 billion in a few years, and maybe more later. Whether all of these pressures will find support in the political process is to be seen. But to the extent they do, they will create dilemmas for DOD, the President, and the Congress. The following analysis does not identify all candidates for spending increases, but it fingers enough of them to show

that even if the defense budget grows moderately, future expenses may rise faster than the resources to fund them.

Military Personnel Spending

Military pay has risen about 7 percent over the past 2 years. This increase reflects a judgment that past pay increases were not sufficient to attract, retain, and adequately compensate servicemen and servicewomen. In constant 2000 dollars, the DOD budget in 1990 provided $54,000 in pay per active-duty individual. In 1999, it provided $55,000. While these figures conceal many complexities, the basic reality is that aggregate military pay remained mostly constant throughout the past decade. In 1990, U.S. servicemembers were widely regarded as well-paid. While they received basically the same compensation in 1999, with annual increases to offset inflation, the national economy grew considerably in ways that steadily elevated pay for comparable jobs in the private sector. The result was to make military service less financially attractive for officers and enlisted personnel, especially for those with high-technology skills in demand in the private sector. The pay raises now being funded will help rectify that problem.

How will military pay evolve in the future? Current projections suggest that it will rise at an annual rate somewhat above inflation. If so, military personnel in 2005–2010 will be paid better than those of today. But will these modest increases be enough to continue making the all-volunteer force viable, manned by skilled people? U.S. military forces are becoming more sophisticated by the day as a result of new technologies and information systems. In the coming years, they will need well-educated and productive people at all ranks. The problem is that if the U.S. economy continues to boom, it will offer ever-higher pay to precisely those people whom the military will need. How this challenge will be met remains to be seen. But pressures seem likely to mount to elevate military pay above the levels now being contemplated.

O&M Spending and Construction

Although per-capita O&M spending has spiraled upward in recent years, current projections envision that the O&M budget will level off and grow only at the rate needed to offset inflation in the future. Will this, in fact, be the case? One reason for concern is that a big part of the O&M budget is used to pay DOD civilians. Because they too will face the allures of the booming U.S. economy, bigger pay increases than now planned may be needed to retain a properly skilled civilian workforce. Second, U.S. military

units and personnel will need increasingly sophisticated, expensive training in order to acquire adequate proficiency with the high-technology systems and doctrines of the future. Third, as current weapon systems age, they will require more maintenance in order to keep them operating. Fourth, as new weapons, munitions, and information systems enter the inventory, some of them will require higher maintenance spending than their predecessors. Fifth, costs for health care and similar support activities may continue rising. Sixth, the physical infrastructure—bases, buildings, and other facilities—is aging. This trend could require not only added maintenance funds, but also more spending on military construction. Perhaps steps being taken by DOD to streamline and reduce costs will generate enough savings to offset these pressures for more spending—but perhaps not.

Acquisition Spending: RDT&E and Procurement

Now that DOD is entering the final stages of designing a new generation of weapon systems in many areas, the need for high levels of RDT&E spending might be expected to decline. During the past few years, efforts to develop new weapons and other technologies resulted in an RDT&E budget that hovered at about $35–40 billion, or 14 percent of defense budget. Future projections anticipate that RDT&E spending will decline steadily in real terms, and will consume only about 10 percent of the budget later in the decade. However, political pressures are now rising to leapfrog the weapon systems now slated for procurement by developing an entirely new, more advanced generation of military technologies. Such pressures could produce a burst of new RDT&E spending.

Pressures for more procurement spending are not speculative, but real. Although the annual procurement budget is slated to grow to $70 billion by mid-decade, this increase might not be enough to fund the coming bow-wave of new weapon systems poised to enter the inventory in large numbers. Whereas a $70 billion effort will total only about 22 percent of defense budget at mid-decade, past periods of major procurement have resulted in 30 percent or more of the budget spent on this enterprise. Much depends upon future decisions for the nature and timing of acquisitions, but if the required allocation rises to 25–30 percent of the budget, annual procurement spending could total $80–100 billion. While this figure is illustrative, it suggests the magnitude of the challenge confronting DOD in this arena. Once the upcoming modernization cycle gains momentum, it could generate pressures for $10–30 billion of more annual procurement spending than is now being planned.

In order to replace its aging inventory, DOD will need to buy large numbers of major weapon systems of nearly all types in the coming decade and beyond. This will not require matching the procurement rates of the Reagan years, but it still will need to buy new weapons at a much faster rate than achieved during the 1990s. The costs of air modernization loom largest, not only because new airplanes are expensive, but because three services—the Air Force, Navy, and Marines—will be buying them in sizable numbers. Thus far, public attention has focused on the costly Air Force F–22 fighter, but the challenge goes far beyond this single aircraft. In order to modernize virtually the entire inventory of major combat and support aircraft, over 4,000 aircraft might have to be bought in the next 15 years. Costs for the small number of F–22s being bought—333 are now planned—might be only 15–20 percent of a total air modernization effort that could rise to $300–400 billion during the coming decade. It is the remainder of the aircraft—cheaper individually but more costly in aggregate—that could drive the total bill so high.

The coming procurement bow-wave has its origins in the 1950s, when the United States hurriedly equipped its entire inventory of Air Force, Navy, and Marine fighters with jet aircraft, replacing propeller-driven models inherited from World War II. The impetus was not only jet technology, but also the Korean War and the Cold War nuclear standoff in Europe. This sweeping effort, carried out by the Truman and Eisenhower administrations, set the stage for a block-obsolescence problem. It meant that in the future, aircraft from all three services would reach aging obsolescence at about the same time. The second big wave of modernization began in the 1960s, when such aircraft as the F–4, F–105, A–4, and A–7 were purchased. After serving in the Vietnam War and standing guard in Europe during the early 1970s, these aircraft gave way to the third generation, which was introduced later than normal because of the small defense budgets of the mid-1970s. This third generation included the models now in service: the F–15, F–16, A–10, F–14, and F–18. Because procurement was slow during the late 1970s, the Pentagon rushed to make up for lost ground in the 1980s, when the big Reagan defense budgets opened the gates to fast purchases. During these years, a large number of aircraft were procured quite quickly—about 4,500 combat and support aircraft in a 10-year period. DOD suddenly acquired a gleaming, modern air inventory of new aircraft with similar production dates. Because many of these aircraft are now approaching the end of

their life spans, waiting to replace them is the fourth generation, led by the F–22, the Joint Strike Fighter, and the F/A–18 E/F.

As each new generation arrived, unit costs for fighters and bombers rose steadily. This upward trend owed heavily to the high cost of buying the sophisticated technologies—airframes, engines, avionics, and armaments—being developed in response to demanding service performance requirements. At each stage, the services and the aircraft industry worked together to push new technology as far as the state of the art would permit, and sometimes further. Another contributing factor was the practice, starting in the 1960s, of designing aircraft that could perform multiple missions with high effectiveness. The aircraft of the 1950s were designed for waging nuclear war, but not other missions. When U.S. strategy switched from massive nuclear retaliation to flexible response with conventional forces, aircraft were designed with broader capabilities in mind. The F–4 and F–105 were more flexible and effective than their predecessors, but the Vietnam War showed that they were far from ideal in air-to-air engagements or striking hard-to-hit targets on the ground. The designers of the next generation set about to rectify this deficiency by producing new models that could perform multiple missions, win dogfights, and bomb ground targets with pinpoint efficiency. They succeeded in ways that revolutionized modern air power, but they also gave birth to aircraft with expensive price tags.

During the 1970s, a single F–4 fighter was priced at about $10 million. When the Air Force F–16 and F–15 appeared, they were priced at about $20 million and $40 million apiece. The Navy F–18 and F–14 were equally expensive. In the late 1970s, the higher costs for this third generation of aircraft created great angst and white-hot politics within DOD and the U.S. Government. These aircraft offered high military performance, but they also threatened to break the banks of the procurement budgets of the time. Debates swirled about whether to extend old aircraft by upgrading them, and whether to buy the less-expensive F–16s and F–18s, rather than the more-expensive F–15s and F–14s. DOD eventually decided upon a high-low mix of these aircraft, while also buying the F–117 Stealth aircraft and A–10 tank-killer. Nonetheless, the debates about affordability and effectiveness ended only when the Reagan budgets permitted a big increase in procurement spending.

The Reagan-era policy of equipping the services with these new fighters was expensive, but it helped greatly enhance the combat power of U.S. forces. The aircraft were major contributors, but so also were the smart

munitions and modern information systems that accompanied them. American air forces became proficient not only at sweeping the skies clear of enemy aircraft, but also at influencing the ground battle with lethal strikes against enemy targets on the battlefield and in the rear areas. The Persian Gulf and Kosovo conflicts showed an added advantage: modern U.S. combat aircraft can operate over enemy territory with few losses to themselves. Over the past decade, the networking of air forces with ground and naval forces has played a major role in propelling U.S. military doctrine toward its growing emphasis on joint operations. The strategic implication is that air power has come of age, fulfilling its promise of being able to greatly influence the outcome of wars. But this achievement did not come cheaply, and pursuing it further will not be cheap either.

Today's terms of debate—the struggle to balance effectiveness and affordability—are exactly the same as they were in the 1970s. Only the names of the aircraft and their costs have changed. Today's candidates for procurement are more effective than the aircraft to be replaced, but even after inflation is taken into account, their higher costs are eyebrow-raising. Per-unit costs for these aircraft are a variable, and will be known only when their exact components are finally approved, production schedules are set, and foreign buys are determined. The premier Air Force fighter, the F–22, offers low radar signature at high speeds, advanced avionics, and high aerodynamic performance. It will enter into full production in a few years, but currently, test models are priced at about $184 million apiece. The less-sophisticated Joint Strike Fighter, which is slated to be bought in larger numbers, currently is priced at about $75 million apiece. The Navy F/A–18 E/F fighter currently is priced at $86 million per copy. DOD will need to buy enough new fighters not only to equip Air Force, Navy, and Marine air wings, but also to provide trainers, maintenance floats, replacements for losses, and test aircraft. The cost implications of buying over 3,000 new fighters, along with their maintenance packages and smart munitions, are obvious.

Although these fighter aircraft will dominate the air modernization effort, substantial numbers of support aircraft must also be bought. Support aircraft often escape public notice, but they are large in numbers, and they play a big role in making modern fighters and bombers effective in combat. In the coming 15 years, about 800 of these aircraft likely will need to be procured. They include command and control aircraft, electronic warfare aircraft, tactical and strategic transports, tankers, and fixed-wing

submarine hunters. Many of them are more expensive than fighter aircraft. For example, the C–17 transport costs $335 million per copy, and the E–8C JSTARS, $560 million. These important support aircraft and their costs significantly drive up the expense of air modernization.

Air modernization is not the only driver of growing procurement requirements. For land forces, the Army will be buying about 1,200 Comanche helicopters, and the Marines, 360 tilt-rotor V–22 Osprey aircraft. In addition, several hundred scout and utility helicopters will have to be replaced or upgraded owing to obsolescence. The Army is planning to remanufacture 530 Apache helicopters in order to use the Longbow Hellfire missile, and to buy 500 new Crusader artillery tubes. It also is upgrading about 1,500 M–1 tanks and 1,100 Bradley infantry fighting vehicles. The Marines are planning to buy over 1,000 advanced amphibious assault vehicles, and to acquire new lightweight howitzers. In addition to these measures, the Army recently has adopted a plan to equip several of its brigades with potent lightweight weapons that can quickly be airlifted to crisis spots around the world. Its quest for mobile but well-armed brigades that deploy quickly is leading it to develop a new generation of light tanks, infantry fighting vehicles, artillery tubes, and other weapons. The cost of this important effort is yet to be seen, but it promises to be several billion dollars. Overall, this Army and Marine modernization plan is relatively modest and can be carried out over 15 years or more, but it will create further pressures for larger procurement budgets during the coming decade.

Another procurement driver will be shipbuilding plans. Whereas the Navy aspired to 600 ships during the Reagan years, it has been downsized in the past decade to its current posture of 316 "battle force ships." During this period, the Navy has been carrying out a modest construction program of about seven ships per year. Over the long haul, this rate will be insufficient to keep a 300-ship Navy. Some analysts worry that unless new construction increases, the Navy is destined to shrink to 250 ships or less in the coming years. This trend flies in the face of recent Navy calls for a re-buildup to 360 ships (discussed below). In addition, new Navy ship models are now under consideration, including the small "Streetfighter," high-technology destroyers and cruisers with small crews, submarines capable of carrying large cargoes with many cruise missiles, and big floating platforms that function as large airbases. What these developments will produce is as yet unknown. As of now, a reasonable conclusion is that owing to the scheduled obsolescence of existing ships, the Navy's

current construction program through 2005—47 new ships and 28 extensions/overhauls—is likely to be subjected to calls for a bigger effort over the coming decade. If so, this trend will create added pressures for a larger DOD procurement budget than now planned.

Ballistic Missile Defense

Ballistic missile defense (BMD) is a highly visible strategic departure that comes in two forms: theater air and missile defenses (TAMD) for U.S. forces and allies, and NMD for the United States. In response to accelerating WMD proliferation, multiple missile defense programs are now progressing through the R&D cycle, and deployment decisions will be made in the next few years. TAMD programs include lower-tier systems such as the Army PAC–3, the Navy area defense system, and the NATO medium extended air defense system, and upper-tier systems such as the Army theater high-altitude area defense (THAAD) system, the Navy theater-wide program, and the Air Force airborne laser for boost-phase intercept.

NMD systems are not as far along. They are focused on defense against limited attacks and accidental or unauthorized launches. Design concepts include a combination of endo-atmospheric, exo-atmospheric, and boost-phase systems. Testing problems have precluded deployment decisions to date, but in early 2000, Secretary Cohen's *Annual Report to the President and Congress* spoke of a "first phase" NMD architecture that would include 100 ground-based interceptors, an X-Band radar deployed in Alaska, five upgraded early warning radars, and other components. If an NMD system is deployed, it will be part of a larger effort to create improved homeland defenses against an array of threats, including terrorist attacks.

The idea of creating ballistic missile defenses is not new. It was explored in the 1960s, when Spartan and Sprint missiles were being developed. It was examined again in the 1980s, when the Reagan administration launched its Strategic Defense Initiative (SDI). Both efforts yielded the conclusion that full-scale defense against very large missile threats was neither affordable nor possible against an enemy determined to maintain a strong offensive capability. But limited defense against small threats, either abroad or at home, was a more feasible proposition, provided the technical problems of networking missiles, radars, and command and control systems could be solved. Current programs are anchored in the premise that with modern technologies and information systems, these problems are resolvable in affordable ways.

What the future holds is uncertain. For TAMD, initial production of PAC–3 and the Navy area defense system is already under way, and

THAAD is entering the manufacturing stage, with initial deployment expected in 2007. With other systems still undergoing testing and review, the exact combination of future lower-tier and upper-tier systems has not yet been decided. Future NMD systems are even less clear; much will depend upon WMD threats, technological progress, and arms control negotiations. The NMD program is slated to cost $10–15 billion through 2005, but this expense is mostly for R&D measures, not full-scale deployment. Costs for procuring and operating TAMD and NMD systems will depend upon the size, nature, and rate of deployment. Any estimate is speculative, but a few years from now, DOD could be spending several billion dollars annually for BMD.

While public attention is likely to remain focused on missile defense controversies, pressures for added defense spending in the nuclear arena might also come from another source: strategic forces for offensive missions. As a result of START negotiations, these forces are slated to decline to 836 intercontinental ballistic missiles (ICBMs) and sea-launched ballistic missiles (SLBMs)—with a total of 2,250 warheads—and 93 heavy bombers by 2007. Although the future force will be far smaller than during the Cold War, current weapons will be aging by then, and efforts to modernize them with new systems and subsystems could exert pressure for more spending. Today's strategic forces budget of about $7 billion is slated to increase by only enough to offset inflation, but this forecast could change if interest builds in new modernization. The same holds true for the command, control, communications, and information and the space programs, which support both strategic and conventional forces. Spending for this program too is slated to rise only enough to offset inflation. But with information systems and space technologies becoming more important in U.S. defense strategy, this forecast may not be viable.

International Operations, Infrastructure, and Overseas Presence

Only time will tell whether the recent upsurge of humanitarian missions, peacekeeping operations, and limited crisis interventions becomes a permanent feature. Perhaps limits will be set by U.S. policy, as suggested elsewhere in this volume. But because many regions are so turbulent, pressures for such operations may remain as high as today, or even increase. If the current pace continues, the cost will be about $4 billion annually. While these operations are not hugely expensive, they are not cheap. Often they inflict temporary turbulence on the defense budget because O&M funds must be used to pay for them before Congress can pass a special supplemental appropriation. The bigger drain comes from the higher

tempo imposed on parts of the force structure. Often DOD must employ units with special capabilities, and because these units exist in limited numbers, they are easily overtaxed. When combat forces are deployed to lengthy involvements in humanitarian and peacekeeping operations, they are diverted from staying prepared for wartime missions. When deployed on such operations, these forces could be hard to extract for combat assignments in event of war elsewhere. For these reasons, these operations are widely viewed as having a more deleterious impact on defense preparedness than their relatively minor size and budget impact would suggest. The core problem is the lack of the manpower, forces, and funds both to perform these operations regularly and to stay prepared to carry out its warplans under the two-MTW strategy.

Although public debate is focused on this controversy, a different issue may prove to have an equal or greater impact on the defense budget: spending on overseas bases, facilities, and related infrastructure. Currently, about 235,000 troops are stationed abroad. These forces are mostly based in three areas: Central Europe (110,000), Northeast Asia (93,000), and the Persian Gulf (25,000). Current trends suggest that many future operations—peacetime and wartime—may be conducted at places far removed from these locations. For a host of reasons, the so-called southern belt may become a new focal point of U.S. defense commitments. This unstable belt begins in the Balkans and Caucasus, passes through the Greater Middle East and South Asia, and stretches along the Asian crescent from Southeast Asia northward to Okinawa and Japan. At the moment, the U.S. military has few of the bases, facilities, prepositioned equipment, coalition arrangements, and other assets that would be needed for operations there. For example, withdrawal from the Philippines a decade ago left the Armed Forces with no major air and naval bases in Southeast Asia, where it may be called upon to operate with growing frequency in the coming years. If acquiring these assets becomes necessary, the effort could impose significant spending requirements on the defense budget.

The effect could be even greater if steps are taken to alter the size and nature of U.S. overseas presence. Because the current presence reflects fading Cold War missions, it may not prove well-aligned with future missions and needs. In Europe, DOD may need fewer heavy land formations in Germany, but more mobile brigades, air forces, and naval units for use in the Southern region, including Turkey, the Balkans, and elsewhere. In the Middle East and Persian Gulf, the need to develop a wider network of coalition partnerships may necessitate larger U.S. troop deployments there

if political conditions permit. In Asia, the large American presence in Korea and Japan may be rendered obsolete if Korean reconciliation ends the risk of war there. Other Asian security affairs could compel the design of an entirely new military presence, with different forces, deployment patterns, basing arrangements, coalition practices, and reinforcement plans. Although the future is uncertain, the key point is that significant changes may lie ahead. To the extent this proves to be the case, designing of a new and different overseas military presence could have significant consequences for the defense budget. Savings might be possible in some areas, but added costs could be the case in others.

Conventional Force Enhancements

Although conventional forces will be improved by procuring new weapons, additional pressures seem likely to rise for changes in the structures of these forces in order to enhance their capacity for warfighting and other missions. One reason is the effort to develop new joint doctrines under the mantle of *Joint Vision 2020* and the revolution in military affairs. As ongoing experiments give rise to ideas for implementation, they may produce changes in how basic force elements—divisions, fighter wings, and carrier battle groups—are organized and operated. The key concepts of information networking, dominant maneuver, precision engagement, full-dimension protection, and responsive logistics could result in new forms of joint operations and force structures that may require significant funding to pursue.

In addition, CINCs may be seeking new capabilities in order to carry out their war plans and to offset asymmetric strategies. One example is the growing emphasis on forced-entry capabilities in the event a war begins with surprise enemy attacks that inhibit the U.S. capacity to carry out reinforcement plans. A second example is the growing need to conduct rapid lethal strikes against enemy WMD assets in order to prevent their use against U.S. forces. A third example is the need for larger, better stocks of smart munitions and cruise missiles in order to carry out the growing emphasis on deep-strike operations for defense and offense. The need for new capabilities to carry out these and other missions could give rise to new technologies and systems that are only dimly understood today. If so, the result could be further pressures on the U.S. defense budget.

Unless U.S. defense strategy is scaled back or allies improve their forces for new-era missions, DOD is also likely to face requirements for at least a modest expansion in the size of the force structure, including more units and manpower. One candidate is so-called LD/HD forces: scarce assets that

provide special capabilities often in demand for peacekeeping, warfighting, or both. Examples from all three services (not all of which are on the official LD/HD list) include medium truck companies, military police, construction engineers, civil administrators, psychological operations units, special forces, coastal patrol boats, unmanned aerial vehicles, refueling aircraft, command and control aircraft, defense suppression aircraft, and search-and-rescue aircraft. Recent experience has shown the U.S. force posture to be short in several of these areas; the result is that existing units have been run ragged in meeting demands for their services. If this trend continues, DOD will have a compelling reason to seek more of these assets.

As for other forces, various options to alter the status quo may receive consideration. The Army might not need more active divisions and brigades, but it will continue improving the mobility and firepower of existing units, while also upgrading 15 Reserve component brigades to higher readiness. The Army may also seek more active logistic support units, more deep-fires units, more prepositioned equipment, and additional command, control, and information assets. The Air Force's current structure of 20 active and Reserve fighter wings may be deemed adequate for most warfighting needs. But the role of airpower in U.S. defense strategy is growing, and already a large number of the 12 active wings are deployed overseas, resulting in strains on its posture and unusual reliance on Reserve units. The idea of adding one or two wings, plus more support aircraft, may gain support in the coming years. Likewise, the Navy may have enough combat forces for warfighting, but its force needs are strongly influenced by peacetime deployment practices and the large rotational base needed to sustain them. Already the Navy is arguing for a reversal of downsizing, and a buildup from today's posture of 316 major ships to 360 ships, including more carriers. This argument seems likely to gain strength in the future.

Some of the pressures for more forces and manpower could be offset by streamlining existing combat, support, and national infrastructure assets as the information revolution unfolds, new technologies appear, and consolidation is pursued. If success in these areas is achieved, perhaps DOD can carry out future missions with its current manpower of 1.38 million troops. But if not, a manpower expansion of 10–15 percent could be needed. This step would require added funding, not only for more military pay, but also to provide for the accompanying increases in O&M, procurement, and other accounts. The impact on the defense budget would be significant.

The Challenge Ahead

The coming decade will bring a major challenge to defense planning. With both international conditions and U.S. forces entering an era of transformation, clinging to the status quo will not be possible. The Bush administration's strategic reviews should focus on the fundamentals of U.S. defense strategy, force posture, and budgets. They also should address the growing need for allies and coalition partners, especially NATO and European forces, to improve greatly their forces for future missions and operations outside their borders. Adequate allied and partner forces are a vital complement to U.S. defense strategy, but they will not be a substitute for strong U.S. forces.

Enough of the multiple pressures arising for new U.S. defense spending are likely to take sufficient hold to create a widening gap between resources and requirements. Serious dangers will arise if future U.S. defense strategy is too ambitious for DOD forces to carry out effectively. The result could be insufficient assets in one or more key areas of strategy. A second danger arises if scarce budget resources are allocated inefficiently in ways that result in an incoherent, unbalanced force posture. Such a posture might not be able to fulfill a well-designed strategy that otherwise would be supportable if resources are used wisely. An even bigger danger is a strategy-force mismatch combined with an incoherent, ineffective posture. The damage done to U.S. military preparedness and national security could be considerable.

The easiest way to avoid these looming dangers would be to fund significantly larger defense budgets. A combination of a sizable step-level increase in the near term followed by steady real increases of 1–2 percent annually in later years likely would be needed. But while moderate budget increases may be forthcoming, a bigger increase of this magnitude does not seem feasible in today's political climate. As a result, DOD will be compelled to make do with the resources that are available, and to make strategic decisions wisely and responsively. Thus, the Department of Defense, the President, and the Congress must focus on three critical tasks: shaping a defense strategy that meets key security needs yet is affordable; designing a force posture that can implement this strategy effectively; and crafting an integrated program path that strengthens the force posture in coordinated, well-planned ways.

To the extent that resources fall short of requirements, defense planning will need to weigh alternative options that provide different ways to navigate the future. A number of such options are presented in other

chapters of this book. Perhaps the solution will be to retain the current strategy, or even enlarge its scope, while better tailoring the future posture to support it. Or the solution may be to scale back the strategy in ways that permit an intense focus on fewer strategic demands. Above all, this is a time for clear thinking. Decisiveness will be needed, but simple-minded approaches should be avoided. Great damage will be done if the United States succumbs to the impulse to withdraw from world affairs in some major way, or slashes its forces deeply, or scuttles a procurement effort that is key to remaining the world's strongest military power. Careful analysis instead may result in the United States urging allies to assume more responsibility for some missions, and in DOD being less preoccupied with preparing for two regional wars and stretching out its procurement efforts. Most likely a balanced approach will remain best, but not necessarily in ways that perpetuate the status quo. By 2010, the Nation may be conducting its defense affairs, at home and abroad, in significantly different ways than now. If change can produce a sound strategy and an effective posture for the strategic conditions, then it is something to be welcomed, not feared.

Regardless of the given strategy and force posture, firm priorities will have to be set. DOD will need to survey the tradespace of its programs in order to determine both the capabilities that the military needs and those that it can do without. This means that it will be compelled to identify not only the strategic risks that must be eliminated or minimized, but also those that can be accepted. None of these decisions promises to be easy. But they are the stuff of living in a still-dangerous world where nothing is perfect, the future is up for grabs, and little can be taken for granted. The consolation is that if America makes these decisions wisely, it will greatly enhance its chances for making the new century an era of peace and progress.

Notes

[1] For similar views on the future funding shortfall, see Michèle A. Flournoy, *Report of the National Defense University Quadrennial Defense Review 2001 Working Group* (Washington, DC: Institute for National Strategic Studies, National Defense University, November 2000).

[2] *A National Security Strategy for a New Century* (Washington, DC: The White House, December 1999).

Chapter Five

Defense Strategy Alternatives: Choosing Where to Place Emphasis and Where to Accept Risk

by Michèle A. Flournoy and Sam J. Tangredi

The 2001 Quadrennial Defense Review will provide the Bush administration with its primary opportunity to articulate a defense strategy for the United States. Whether the Bush team chooses to retain, revise, or significantly depart from the themes of the current strategy, the resulting defense strategy should chart the course of defense decisionmaking for the next 4 years. The strategy developed in the QDR will provide the basis for the new Defense Planning Guidance, which sets the planning and programming priorities for the Department of Defense. It will also constitute the principal DOD input to national security strategy (NSS), which will be developed concurrently by the National Security Council for the President. Most importantly, it will serve as the Bush administration's chief vehicle for communicating its vision and priorities for the U.S. military to Congress, the American people, and both allies and potential adversaries around the world.

During the 1997 QDR, there was a great deal of debate about whether defense reviews should be strategy-driven or resource-constrained.[1] Fundamentally, however, this debate was premised on a false choice. In truth, any responsible defense review must be both strategy-driven *and* resource-constrained. It must be strategy-driven to ensure that the Nation spends the limited resources that it devotes to defense *(means*) in the most effective ways possible to achieve its national objectives (*ends*). But ultimately it must also be resource-constrained to be relevant; a strategy that assumes unconstrained resources may enlighten as to what we might devote to defense in an ideal world, but it is not particularly useful to the

real-world decisionmaker wrestling with hard choices about how to spend the next dollar.

This tension between the ideal and the practical is illustrated in the juxtaposition of two definitions of strategy. The first is from the Joint Chiefs of Staff: "Strategy [is] the art and science of developing and using political, economic, psychological, and military forces as necessary during war and peace, to afford the maximum support to policies, in order to increase the probabilities and favorable consequences of victory and to lessen the chances of defeat."[2] Ideally, a choice of strategy would indeed "afford the maximum support to policies." But in the real world, "Strategy is a fancy word for a road map for getting from here to there, from the situation at hand to the situation one wishes to attain."[3] Strategy involves the same resource constraints and issues of any journey—not just where to go, but questions about when to go, how fast to travel, and how much it will cost. The image of a road map—taken from a volume appropriately subtitled ends and means—reminds us that the decision to adopt a particular strategy is but the first choice of any integrated path of decisions linking objectives to the actual employment of resources. The real challenge is to determine the best strategy possible given the available resources, while explicitly accounting for risk when actual resources fall short of the ideal.[4]

Strategy as the Driver

For strategy to drive the rest of the QDR, at least three conditions must be met. First, the strategy must be developed and endorsed at the highest levels of DOD early in the QDR process. Given the compressed timelines of the review, crafting the defense strategy must be an immediate top priority, perhaps the most crucial one, for the new Secretary, Chairman, and rest of the senior DOD leadership.[5] In practice, failing to make strategy an early priority would mean conducting the rest of the review without the benefit of a clear vision and priorities: in essence, attempting to do strategic planning without a clear sense of the desired outcomes. The result would be a disconnected journey full of stops and starts, which is subject to the pull of inertia that is often described as muddling through.

Second, as soon as DOD leadership is comfortable with the new strategy, it needs to issue the resulting strategic vision in the form of binding guidance to the rest of the review's participants. Otherwise, the strategy risks being ignored by those who would prefer to see the review primarily as a "budget drill," and thus risks being ultimately disconnected from how

DOD actually allocates its resources. Without a binding strategy, QDR participants could be tempted to stick to the most familiar, and possibly most parochial, paths—another recipe for collective muddling through.

Third, the strategy must have teeth. It must articulate clear choices about where to place emphasis and where and how to accept or to manage a degree of risk. It must be consistently enforced in the decisionmaking fora of the review. Only thus can the QDR achieve a concert of the whole from the sum of very capable but potentially competing parts.

This chapter seeks to jump-start the strategy development process by identifying the reasonable range of defense strategy alternatives for the Bush administration. It begins by laying out a menu of six broad defense strategy options, describing where each strategy would place emphasis and where it would accept some degree of risk. It assesses the principal strengths, weaknesses, and risks of each. It concludes by arguing for a strong linkage between strategy and resource decisions.

Each of these strategy alternatives is essentially a different approach to dealing with the future security environment discussed in chapters 2 and 3 and to answering the 12 strategy questions articulated in the introduction (chapter 1). These strategy alternatives also provide the foundation for many of the chapters that follow. The discussions of force sizing, force structure, overseas presence, peacetime operations, transformation, and strategic forces and national missile defense, and strategy-driven integrated paths are all grounded in the strategies presented in this chapter. In essence, this is the heart of the book, a central and unifying point of reference for the chapters that follow.

Alternatives for the Bush Administration

The current defense and foreign policy debate in the United States suggests six broad defense strategy alternatives for consideration by the Bush administration. They are summarized in table 5–1. This range of alternative strategies represents the range of *plausible*, if not necessarily *probable,* U.S. defense strategies. In determining plausibility, the dominant question asked about each alternative was *whether it represents the thinking of a significant group with direct influence on American politics.* Foremost but not exclusive sources were the stated positions of U.S. presidential candidates in the 2000 election campaign. Another significant source was the views expressed by participants in ongoing or previous defense reviews, such as the 1997 National Defense Panel. Other commentary in influential public media by noted defense experts was a

Table 5–1. Defense Strategy Alternatives

Strategy A: Shape, Respond, Prepare—The Current Defense Strategy
Strategy B: Engage More Selectively and Accelerate Transformation
Strategy C: Engage More Selectively and Strengthen Warfighting Capability
Strategy D: Engage Today to Prevent Conflict Tomorrow
Strategy E: Strategic Independence
Strategy F: Preventive Defense

third source; however, much of that defense debate was already reflected in the alternative campaign positions.

In the pages that follow, each of these alternatives is described in terms of its *worldview*, that is, what it identifies as most important about the future security environment; its assessment of the *U.S. role* in the world; *key elements of the strategy*; and the *priorities* that it would establish for the U.S. military and for DOD more broadly. More specifically, we compare and contrast how each strategy treats the following types of issues:

- Overseas presence and peacetime military engagement: how much is appropriate? for what objectives?[6]
- Smaller-scale contingencies: which SSCs merit U.S. involvement? what should the U.S. role be, once the United States is involved?[7]
- Major theater wars: how likely are such conflicts? what kind of wars should DOD prepare for? should DOD prepare for one or more MTWs?[8]
- Homeland security: what is the nature and immediacy of the threat? what is the appropriate role for DOD?[9]
- Nuclear deterrence and NMD: what are the appropriate roles for nuclear weapons? what offense-defense vision should guide U.S. strategic policy, posture, and arms control efforts?
- Transformation: what are the objectives of transformation? what capabilities should it yield? at what pace should it be pursued?[10]
- Role of allies and partners: how much should the United States rely on its allies and international partners, and what assumptions should be made about their capabilities and participation in combined operations?

While a host of other issues affect American defense choices, such as the ability to recruit and to train quality personnel, these seven issues appear to have the most direct effects on the choice of strategy. They are the

key characteristics that distinguish one defense strategy from another in the contemporary world.

Strategy A: Shape, Respond, Prepare—The Current Defense Strategy

Although the descriptive phrase "shape, respond, prepare" was first articulated during the 1997 QDR, it describes the premises of U.S. defense strategy throughout the Clinton administration. The strategy has had both vocal supporters and critics outside the administration, but there has been general agreement that it represents a serious effort to come to grips with defense requirements in the post-Cold War world.

In the worldview underlying Strategy A, the international system is viewed as stable overall, but the security environment is seen as dynamic and uncertain, with a number of ongoing and potentially festering regional threats to peace. There appears to be no global threat from a military near-peer competitor (like the Soviet Union was during the Cold War), and the rise of such a global competitor is considered very unlikely until at least 2025. The primary military challenge comes in the form of aggression by rogue states; of particular concern is the potential of large-scale, cross-border aggression against a U.S. friend or ally. In addition, given its unique position of power in the world and its conventional military dominance, the United States faces the rise of asymmetric threats, such as weapons of mass destruction, information warfare, and terrorism that could threaten its interests, allies, forces, and even the U.S. homeland.

Strategy A's worldview is unabashedly internationalist, seeing American support of democracy and market capitalism as suitable foundations for a just world system. Rather than subordinating American interests to some sort of collective worldview (largely unformed), proponents of this strategy argue that these interests propel the United States into seeking a position of leadership that is vital to the continued maintenance of international community. The United States is seen as a global power with global interests. These interests are perceived as transcending mere parochial national objectives, due to the unique U.S. role as sole superpower. To the strategy's proponents, the United States has both a requirement and a mandate to provide the necessary leadership to ensure peace and stability in those regions that it views as vital to its national interests—and, by definition, to the interests of the world community. Without U.S. leadership, long-term peace and stability are uncertain in many world regions. The mandate to lead is bolstered by the

apparent international consensus that the United States is the preferred security partner for most nations and that the United States plays a relatively fair role as a "balancer" between potentially competing regional powers and as the provider of regional stability.

To ensure that the United States maintains the political influence to play these roles, a policy of engagement is seen as a crucial element of its foreign affairs.[11] Engagement is critical in maintaining U.S. influence in regions where the United States has vital and important interests, ensuring that the security environment evolves in ways that are favorable to U.S. (and also world) interests, and deterring actions antithetical to national interests.

A particularly important aspect of U.S. leadership is the strengthening and adapting of U.S. regional alliances and coalitions. Many of these alliances were created as elements of the strategy to contain the expansion of the Soviet Union. However, the linkages forged in that era appear to transcend the bounds of the Cold War and remain relevant in dealing with the regional threats of the post-Cold War world.[12] At the same time, the necessity for U.S. leadership in building *coalitions of the willing* has been among the most widely accepted of the lessons of Operation *Desert Storm*. Proponents of Strategy A accept the military role in alliance-building and coalition-building as essential for the achievement of U.S. economic, political, and security goals.

The key elements of Strategy A can be characterized in terms of *shaping* the international environment, *responding* to the full spectrum of crises, and *preparing* now for an uncertain future. Conceptually, the strategy strives to strike a balance between these three elements. Although funding decisions create a de facto set of mission priorities, the strategy as described in the official documentation does not prioritize the elements. Critics have identified this lack of prioritization as a primary flaw of the current strategy.

Shaping refers to efforts to promote regional stability, prevent conflicts and reduce threats, and deter aggression and coercion in peacetime. As such, it encompasses many of the peacetime functions of U.S. military forces. Peacetime engagement activities are focused primarily on promoting regional stability through building alliances and coalitions with like-minded nations, consistent with the U.S. role envisioned in Strategy A's worldview. The overseas presence of combat-credible U.S. military forces—a major feature of the peacetime military posture called for by the strategy—provides a cadre of forces to conduct a robust program of

engagement. At the same time, their presence helps to deter regional threats while reassuring allies and coalition partners of American support for their security. This counterbalances the coercive abilities of potential regional aggressors. If regional deterrence fails and actual hostilities occur, then presence forces are available to provide the initial military response for containing the conflict and reversing the aggressor's gains.

The *responding* role calls on the U.S. military to be able to deal with the full spectrum of potential crises, from deterrence in crisis, to conducting SSC operations, to being able to fight and to win MTWs, including those in which asymmetric threats such as chemical and biological weapons are used. In emphasizing full-spectrum capabilities, Strategy A sets the expectation that joint forces can transition with relative ease from peacetime operations to increasingly higher levels of conflict.[13] Perhaps the most challenging and important capability requirement set by the strategy is for the U.S. military to be able to deter and, if necessary, to fight and to win two MTWs in overlapping timeframes. For force structure planning purposes, the two MTWs are currently assumed to be on the Korean Peninsula and in Southwest Asia (with Iraq as the aggressor). In addition, forces are expected to be able to conduct multiple concurrent SSCs and to transition to fight MTWs in accordance with required timelines. At the same time, the strategy calls for a secure, survivable, and robust strategic nuclear force to deter the use of nuclear weapons—and potentially other forms of WMD—within the limits established by arms control treaties.

Although the strategy does not explicitly prioritize these elements of response, in practice the two-MTW requirement has been treated as "the first among equals." It has come to drive much of DOD resource allocation in the areas of force structure and modernization. In some quarters, this has led some to refer to Strategy A (erroneously) as the two-MTW strategy.

In addition to *shaping* and *responding*, U.S. military forces are expected to *prepare now* for an uncertain future. This is the least developed portion of the overall strategy, particularly because of the relatively indistinct nature of future threats envisioned by the worldview. Strategy A calls for a focused modernization effort intended to maintain the U.S. qualitative military superiority and technological edge over potential foes. Strategy A also embraces the concept that a revolution in military affairs is occurring—driven most notably by the revolution in information technologies—and argues that it should drive the transformation of U.S. military systems, operational concepts, and organizational structures. But

Strategy A lacks the sense of urgency of some of the other strategy alternatives with regard to transformation, pursuing a gradual, evolutionary approach rather than a rapid, more radical approach.[14] Consistent with this approach, Strategy A maintains funding for basic science and technology (S&T) and R&D programs, as well as concept development and experimentation, albeit at levels lower than the strategy alternatives that would seek to accelerate transformation. This modernization effort is assisted by several management initiatives within DOD, particularly a series of improved business and acquisition measures known collectively as the revolution in business affairs (RBA), which seeks to enhance DOD efficiency and to free up additional resources for investment in high priority areas.[15]

Homeland defense is a newer element of Strategy A, receiving initial attention during QDR 1997 and in the subsequent National Defense Panel report. Recent presidential initiatives have placed efforts at consequence management and infrastructure protection within the responsibilities of DOD (in support of other agencies and civil authorities). NMD remains a technology development program, rather than a requirement, in formal expositions of Strategy A.

In short, Strategy A calls for a full-spectrum force that attempts to pursue all priority missions with near-equal emphasis. The result has been a balanced mix of overseas and forward presence with global power-projection capabilities. Overseas presence is retained in Europe and Asia (albeit below Cold War levels), while a rotational presence is maintained in Southwest Asia. Critical to the success of the strategy is a series of elements identified as force enablers, including high-quality and well-trained personnel, a globally vigilant high-technology intelligence network, global communications, access to space (and potential space superiority if challenged), and retention of the sea and airspace superiority largely developed during the Cold War.

In terms of force structure, Strategy A (as currently implemented) sizes conventional forces primarily to meet the demands of the two overlapping MTWs, with the exception that naval forces are sized for presence. It assumes that such a force is sufficiently large to handle the requirements of SSCs, peacetime engagement, a modest transformation effort, and homeland defense. Separate strategic nuclear forces are retained, although some platforms originally designed for that mission (such as the B–2 bomber) have been assigned to conventional forces. Because of the emphasis on two overlapping MTWs, a high level of readiness is required throughout the force in order to meet the demands of the MTW operational timelines. The

use of an MTW-structured force for multiple, concurrent SSCs has resulted in a significantly high tempo in the deployment of personnel (PERSTEMPO) and strains on some scarce specialized capabilities (LD/HD assets). Such assets include platforms that also would be in high demand in the MTW scenarios, as well as some assets that would hold a lower priority in MTW timelines but are essential for operations at the lower end of the spectrum of SSCs. High PERSTEMPO in peacetime is perceived to exacerbate the problems inherent in recruiting and retaining an all-volunteer force, especially in a period of economic growth, and has a potentially corrosive effect on long-term readiness.

Strategy A has been praised by its supporters for trying to balance risk across the near, mid-, and longer term and for broadening DOD focus beyond crisis response and warfighting to include the more proactive elements of shaping the international security environment and preparing now for an uncertain future. But it has also received criticism. Some have argued that sizing U.S. forces primarily for MTWs and naval forward presence sends a mixed signal regarding transformation. Effective transformation, they argue, requires increasing the level of resources invested in S&T, R&D, concept development and experimentation, and leap-ahead technologies while reducing the readiness of the units being transformed. This puts the goal of transformation in tension with the objective of maintaining high warfighting readiness across the force. High readiness also demands considerable resources, squeezing available funding for modernization in a fiscally constrained defense budget. Strategy A, as currently articulated, calls for a procurement target of approximately $60 billion per year, focused primarily on the modernization or replacement of current platforms. Critics see this modernization focus as an incremental effort that ultimately discourages transformation. In this light, Strategy A can be seen as taking a modest, cautious approach in preparing for the future security environment.

However, the loudest criticism of Strategy A is that it is too ambitious and has failed to articulate clear priorities, especially when resources have fallen short of requirements. The strategy, it is argued, has overcommitted the force; it has called on the U.S. military to do too much with too little. In practice, the strategy has called on the U.S. military to undertake a variety of missions beyond those for which the force was sized and resourced (MTWs and naval forward presence). This has contributed to a resource shortfall that is allowed to revolve among the elements of the strategy: if readiness is fully funded, then modernization is squeezed; if

modernization is emphasized, risk is taken in MTW preparation; if involvement in SSCs exceeds a certain level, both readiness for MTWs and investment in future capabilities may suffer.

Seeking to balance the requirements of shaping and responding in the near term with the need to prepare now to meet future requirements may be a conceptual strength for Strategy A, but the strategy's failure to articulate more explicit priorities that suggest where to place emphasis and where to accept a degree of risk when available funding is insufficient to meet all of the strategy's requirements has contributed to the projected strategy-resources mismatch.

Strategy B: Engage More Selectively and Accelerate Transformation

In contrast to the current strategy, Strategy B establishes a different set of priorities and reduces the emphasis on the requirements of two overlapping MTWs. The primary emphasis of Strategy B is on accelerating the transformation of the U.S. military to meet emerging and longer-range future threats. The primary source for details of such a transformational approach is the National Defense Panel report of 1997, and Strategy B remains the most widely discussed alternative to the current strategy. Additional support for a Strategy B–like approach appeared in the presidential campaign speeches of Governor George Bush; however, support for alternative B crosses partisan lines.[16]

The underlying worldview is similar to that of Strategy A in that it sees a dynamic, uncertain security environment in which the United States, as sole superpower, must provide global leadership. The rise of a military near-peer competitor in 2001–2025 is seen as less likely. However, the proponents of Strategy B see the rise of a near-peer competitor some time in the future as a natural aspect of the competitive nature of the international system. Thus, they view efforts to maintain American military superiority over any rising near-peer as the primary long-term objective of the strategy. In the interim, the strategy focuses on the rise of potential *regional* military competitors, such as the possible emergence of a hostile China in the Pacific region.

The emphasis on the emergence of near-peer or regional competitors gives this strategy's proponents a greater sense of urgency with regard to asymmetric threats and antiaccess or area-denial strategies.[17] Thus, homeland defense is elevated to one of the top DOD priorities.

An accelerated, more revolutionary transformation of U.S. power-projection forces is seen as necessary in order to keep pace with regional antiaccess strategies and area-denial capabilities. More regional powers are seen as having both the capability and the intent to challenge the interests of both the United States and a stable world. The proliferation of WMD, information systems, improved ballistic and cruise missiles, and other advanced technologies—many available in the commercial sector—are seen as placing potent offensive weaponry within the grasp of rogue states and terrorist organizations. Resentment of American power and influence is perceived to be rising among the disaffected populations of have-not states, fueled by the xenophobic nature of many autocratic regimes. At home and abroad, Americans appear to be the most lucrative targets for those seeking media attention or notoriety.

This raises more than a threat to homeland security: U.S. foreign policy measures face greater opposition abroad at the same time that domestic support for American overseas military presence may be wavering. Coercion by rogues or regional competitors may be more successful in dissuading allies or coalition members from providing access or host-nation support for U.S. forces. The worldview of Strategy B involves greater concern about delayed or denied access and the survivability of American power-projection forces in a contested regional theater. The survivability of legacy systems in the face of unexpected and aggressive use of advanced military technology by opponents is questioned. A transformation to a more capable, more high-technology force is required. This is a perception shared by many who view an ongoing RMA as the defining element of the future security environment.

This emphasis on the need for transformation effectively displaces the need to prepare for multiple overlapping MTWs as the primary concern of defense strategy. Strategy B proponents view as unlikely a situation in which the United States is forced to fight two major wars in two separate theaters at the same time, but in the event that such a situation actually occurred, they are confident that new technologies and operational concepts could reduce the capabilities necessary to fight and to win both wars. To some extent, this correlates with the view that the quality and technological advantages of the U.S. military, particularly in air and space forces, could bring cross-border aggression to a rapid halt, thereby eliminating the requirement for two simultaneous major campaigns and thus allowing for the staggering of counteroffensives.

The requirement for U.S. military involvement in multiple concurrent SSCs is also challenged by this strategy. Strategy B suggests that the United States—even in its superpower leadership role—can and should be more selective in choosing to engage militarily in SSCs. The U.S. military should not, as a rule, be used in situations in which vital or truly important American interests are not at stake. In situations involving less-than-vital interests, the United States should refrain from taking a leadership role and should instead allow regional allies or partners to provide the required leadership and capabilities. U.S. involvement in such situations should be governed by the notion of comparative advantage; that is, the United States should bring to the table only what others cannot. For example, the success of a coalition of the willing in dealing with a particular SSC might hinge on maritime, air, or strategic lift capabilities that only the United States could provide, while the United States would probably offer no particular comparative advantage in putting peacekeeping forces on the ground. A current model for encouraging an ally to lead while providing limited but important forms of support would be U.S. support for Australia's leadership of the multinational response to the East Timor crisis.

Proponents of more selective engagement also argue that extensive U.S. involvement in SSCs generates high operational and personnel deployment tempos that degrade warfighting readiness and negatively affect recruitment and retention in the U.S. military. This aspect of Strategy B would also suggest that peacetime military engagement should be more selective overall and that U.S. forces should be withdrawn from some of the long-term deployments in which they are currently involved. The resources and efforts thus made available could then be channeled into the transformation effort or the increased emphasis on homeland defense. Many Strategy B advocates express support for significant efforts toward an NMD, which would require considerable resources. But even without NMD, the perception is that a strong commitment to an increasing DOD role in developing capabilities for detection and response to future asymmetric threats could require a shifting of resources away from engagement. A reduction in operational tempo could also allow greater scope for the organizational transformation efforts needed to match the high-level interest in new approaches to warfighting that might prove more effective and do more with less.

In setting out the desired missions and activities of the U.S. military, Strategy B provides a distinct set of priorities. The highest DOD priorities would include the acceleration of more revolutionary military

transformation directed at preparing for future regional competitors or near-peers possessing considerable antiaccess and asymmetric warfare capabilities. This would be complemented by an increased DOD support for homeland defense. The more traditional military ability to "fight and win the nation's wars" would also be a priority; however, proponents of Strategy B might well reassess the scenarios and requirements for MTWs, paying more attention to asymmetric threats and antiaccess challenges as well as to the potential of new technologies and operational concepts. SSCs that directly affect vital national interests would also be a high priority, but those involving non-vital interests (such as American values or humanitarian concerns) would not. This strategy would also give greater priority to modernizing the nation's nuclear deterrent.

Strategy B would most likely opt for a balanced mix of overseas presence and power-projection capabilities, both geared toward survival in the expected antiaccess environment. This would include full-spectrum force protection against asymmetric threats, including chemical and biological warfare and terrorism. The primary homeland defense efforts would be NMD, WMD consequence management, computer network defense, and domestic and international counterterrorism.

One of the implications of implementing Strategy B in a resource-constrained environment would be potential reductions in modernization programs, force structure, and readiness (particularly readiness for a second MTW) in order to finance transformation and homeland defense. Supporters of the strategy advocate more investment in concept development and experimentation, on both the service and joint forces level. To achieve the material goals of transformation, selective investment would be made in modernization, with less emphasis on the recapitalization of legacy systems and more funding for basic science and technology, military R&D, and potential leap-ahead technologies. Many of these technologies would be directed toward defeating regional antiaccess systems, as well as toward strengthening homeland defense.

Emphasis on transformation and homeland defense programs would be balanced by the policy of selective engagement and the resulting reduction of PERSTEMPO and current strains on LD/HD units. This could help to resolve some of the challenges associated with recruiting and retaining the highly capable personnel needed in a transformed military.

Strategy B is praised for both its emphasis on reducing the employment of today's military and for its focus on transforming DOD to deal

with emerging and future challenges that could, if not adequately addressed, compromise U.S. military superiority and ultimately threaten vital national interests. Critics of this strategy, however, raise two primary concerns. The first is a great skepticism that any future President will be able to be significantly more selective in the commitment of the Armed Forces to operations such as Kosovo, Bosnia, or Somalia. The past, they argue, is prologue; decisions regarding U.S. military intervention are ultimately political decisions, and politics will frequently override the calculus of national interest and stated policies about the use of force.

The second set of concerns relates to transformation. What exactly is transformation? What are its objectives? What capabilities will it yield? And what will it require in terms of force structure reductions, reallocation of resources among the services, or cancellation of major procurement programs? These issues need to be addressed by the strategy's proponents. The primary criticism of Strategy B, however, is that it underestimates the near-term risks associated with accelerating transformation. These critics argue that near-term threats, such as large-scale aggression in Southwest Asia, on the Korean Peninsula, or elsewhere, remain real and that ensuring that the U.S. military can respond effectively to them is the primary responsibility of any Secretary of Defense. Therefore, near-term readiness and force structure should not be sacrificed to facilitate transformation. Whether they agree, any administration that adopts Strategy B will need to be more explicit in accounting for any additional near- or mid-term risk that it would accept as it shifts additional DOD resources into transformation.

Strategy C: Engage More Selectively and Strengthen Warfighting Capability

Strategy C represents a blend of the selective engagement principles of Strategy B and the more traditional emphasis on high-end warfighting that is the de facto priority of Strategy A. The underlying worldview is similar to that of Strategy A: the future security environment is seen as dynamic and uncertain, requiring the leadership of the United States to support a stable international structure. No military near-peer opponent is seen on the immediate horizon (at least until 2025); but unlike the Strategy B worldview, the long-term rise of a near-peer (beyond 2025) is not necessarily seen as inevitable, nor is it considered to be a dominant planning factor for defense policy. Strategy C's worldview focuses on near-term threats of large-scale aggression. Like Strategy A, Strategy C accepts the possibility of multiple overlapping MTWs; indeed, it makes these scenarios the focus of defense

planning. In this context, it is more concerned about asymmetric threats to overseas presence and power-projection forces than about emerging threats to the U.S. homeland.

The ultimate goal of Strategy C is to achieve the warfighting objectives of Strategy A, but at a lower level of risk and without a potential strategy-resources mismatch. Strategy C's priorities stem from a view of a peacetime U.S. role in the international system that is more similar to the B position: U.S. leadership is seen as not essential for collective responses to SSCs where less-than-vital national interests are involved. Strategy C is more selective toward SSCs and engagement. Any decision to use force would be tied directly to U.S. vital interests. But Strategy C is also likely to focus its peacetime engagement efforts toward measures that would enhance the warfighting capabilities of key allies and coalition partners.

This is a back-to-basics strategy in which the primary mission of the Armed Forces would be to "fight and win the Nation's wars," including two overlapping MTWs. Preparing for SSCs involving vital interests and maintaining a robust and credible nuclear deterrent would also be considered high priorities. To reduce tempo strains on LD/HD assets and personnel and to increase the level of MTW warfighting readiness, military forces currently deployed to long-term less-than-vital SSCs would be withdrawn. Resources would be redirected toward correcting warfighting capability shortfalls, improving readiness, and modernizing combat platforms. As a general policy, Strategy C would likely gain considerable support from many active-duty and retired military officers, particularly those tasked with Title 1X service responsibilities for recruiting, training, and equipping the force.

Implementation of Strategy C at a full level of resources would undoubtedly result in a very high quality warfighting force, with a balanced mix of overseas presence and power-projection capabilities. Emphasis would logically be given to forward presence and prepositioned forces in regions where the warfighting risk is judged to be most likely (currently East Asia and Southwest Asia). Readiness would be kept at very high levels, and the overall defense program would be focused on identifying and correcting current warfighting capability shortfalls in areas such as strategic lift, ISR, precision munitions, combat service and service support, and chemical and biological defense.

The primary bill-payer would be the strategy's more selective engagement policy with regard to SSCs, but resources saved here would not likely be adequate to cover proposed additional investments in

warfighting readiness and capabilities. Selectivity toward SSCs could also result in reductions in PERSTEMPO and in the use of LD/HD assets, ameliorating two current resource issues. Increases in high-end warfighting effectiveness would require increased investment in the recapitalization of current platforms and systems, as well as a robust modernization program. However, there appears to be no conceptual imperative for a particularly aggressive transformation program, given the focus on near- and mid-term regional threats rather than the potential rise of a near-peer competitor. While RMA-style technological developments would be welcome, they are not seen as urgently needed to maintain U.S. superiority in the prosecution of future wars. Improving homeland defense would be considered part of any Strategy C defense program, but it, too, would be pursued at only a moderate pace. Homeland defense efforts would likely revolve around military support to civilian agencies. In sum, Strategy C reflects the highest-priority mission of Strategy A, along with a selective engagement philosophy similar to that of Strategy B.

Strategy C is praised by some as refocusing DOD on its most central and enduring mission of fighting and winning the nation's wars. Supporters argue that this strategy would reduce the wear and tear on U.S. forces, enhance their core warfighting competencies, and ensure U.S. military superiority well into the future. Critics of the strategy are united in the argument that the opportunity costs of focusing primarily on warfighting are too great, but they are divided on what those opportunity costs are. Proponents of Strategy A and Strategy D (discussed below) emphasize the loss of opportunities to shape the international security environment and to use the U.S. military more proactively to prevent small crises from becoming larger and more costly conflicts. By contrast, proponents of Strategy B are more concerned about Strategy C's lack of urgency with regard to both homeland security and transformation. They believe that the focus on near- to mid-term regional threats is misguided and that a modest homeland defense and transformation efforts will not be sufficient to meet emerging and future challenges at home and abroad.

Strategy D: Engage Today to Prevent Conflict Tomorrow

Although the specifics of the worldview underlying Strategy D may appear similar to the other alternatives, there is a profound difference in

philosophy toward the nature of deterrence and the role of the United States in the international system. Strategy D calls for maximum peacetime engagement by U.S. military forces, in the belief that such a level of engagement can deter or prevent conflict, including the outbreak of MTW.

The Strategy D worldview sees few threats to vital U.S. national interests, but identifies many smaller near- and mid-term threats to regional peace and security as meriting U.S.-led collective intervention. Crises such as ethnic conflicts and failing states are judged de facto threats to America's long-term interests, even if they do not have a direct effect on America's national survival. From this perspective, the U.S. military is an effective tool for an interventionist as well as internationalist foreign policy. U.S. leadership is seen as the essential mobilizer of collective action, and the cost of such leadership is perceived to be the willingness to put "boots on the ground" and U.S. troops into the more dangerous situations of peace enforcement.

Overseas presence becomes a dominant military activity in the world of Strategy D. However, the predominant logic of presence is not the traditional justification of having forces available for initial response to crises that could become MTWs. Rather, there is a certain degree of skepticism among Strategy D proponents about whether MTWs are likely in a world marked by globalization and economic interconnectivity. Presence is seen, instead, primarily as a deterrent and a moderator of the outbreak of lesser regional conflicts, a politico-military symbol of U.S. involvement, a method of engaging and training foreign militaries and promoting democracy, and a means of providing the initial forces for SSCs. Large-scale cross-border aggression is largely seen as a threat of the past. The implication is that presence forces are needed in great numbers, but not all such forces necessarily need to be as credibly combat-capable for high-end warfighting as they have been configured in the past.

Likewise, there is considerable skepticism about the eventual rise of a military near-peer competitor because of both the expected ameliorating effect of globalization and the belief that an interventionist but even-handed American foreign policy—with considerable efforts at multilateral diplomacy and international consensus-building—would preclude the jealousies and competitions that might provoke the rise of a military competitor. Conflict among the advanced nations would be prevented by shared trade and converging values; conflict with lesser-developed states by ensuring that they receive a share of the globalized economy; and conflict within failing states, with rogue states, and with terrorist groups by a

policy of multinational response, always supported and sometimes led by the United States.

With the overwhelming military superiority developed during the Cold War and demonstrated in the Gulf War, the United States is uniquely positioned to take more of the initiative in shaping the international environment, blending military power, diplomacy, foreign assistance, and commercial ties to reduce threats, resolve crises, and prevent conflicts. This unique leadership role is, according to Strategy D, best played by advancing the shared interests and values of the international community through more effective multilateral alliances, coalitions, and institutions, and especially through the United Nations. This would require that the use of U.S. military forces be governed not only by U.S. national interests, but also by U.S. values concerning freedom, peace, and justice for all humanity. The Strategy D motto might be "We should do what we can, and all we can," to promote peace, stability and international norms.

The key elements of Strategy D would focus on a more active use of the military to shape the international environment, preferably within multinational organizations and institutions as well as U.S.-led coalitions. Peacetime engagement would be the primary employment of U.S. forces, most of it directed toward enhancing key multilateral capabilities through the involvement of unique U.S. assets. Strategy D would greatly increase U.S. involvement in SSCs in order to prevent them from precipitating greater conflicts and to mitigate their international effects. As an adjunct, the United States would increase efforts to enlist regional allies and partners to join in such efforts. Although it is difficult to identify current real-world proponents of this strategy, it reflects the arguments made by several prominent officials at one time or another, including former Secretary of State Madeleine Albright and some regional CINCs.

To reorient assets toward increased peacetime engagement and SSCs, alternative D would reduce (or even eliminate) the current emphasis on multiple MTWs. Transformation efforts would be pursued at a modest pace or perhaps downgraded in order to finance maintenance of and upgrades to a larger force structure with an expanded inventory of legacy systems. Modest support to civilian agencies for homeland defense would be continued. Nuclear deterrence forces, which appear to have no role in engagement or SSCs, would face reduced emphasis and would be shaped by greater emphasis on arms reductions.

Based on its worldview and emphasis, Strategy D would set distinctly different priorities for the missions and activities of the U.S. military. The

highest DOD priorities would incorporate the lowest priorities of alternatives B and C and include proactive peacetime engagement, particularly directed toward building alliances and coalitions; support for multilateral international institutions; intervention in multiple, continuing SSCs so as to prevent or to mitigate the development of crises or conflicts of greater scale (such as MTWs); support for arms control and international accords; and the ability to fight and to win one MTW, although not necessarily at low risk, if deterrence failed.

Homeland defense, transformation, nuclear deterrence, and preparations to fight multiple MTWs would be much lower priorities. Theoretically, these elements would be of lesser concern due to the strategy's robust overseas presence adapted to post-Cold War world realities—including globalization—and greater involvement with multilateral alliances, coalitions, and institutions.

Current power-projection capabilities would be reoriented to support multiple concurrent SSCs and to provide for a transition to fighting a single MTW if that were necessary. Potential strains on LD/HD assets would be mitigated by building more of these units, shifting additional units from the Reserve to the active force, or selectively substituting alternative units as circumstances allowed. This strategy might also employ greater tiering of readiness, particularly for forces that would deploy late to an MTW. Overstretch would be a distinct possibility if this strategy were not fully funded, and affordability could be problematic under projected fiscal constraints.

Another major implication for the joint force might be broader application of the current rotational approach to peacetime force management to include more than naval forces and the new Air Expeditionary Forces. The entire force, including the Army Reserve, might even be reorganized for rotational deployments. Modernization of existing platforms and systems would be more selective, with a distinct emphasis on recapitalization rather than transformation. Under a philosophy of "numbers count most for presence," the acquisition policy might be one of accepting less-capable platforms in order to afford greater quantities, resulting in a force structure with much more of a high-low mix than today's force. This might also slow the growing capability gap between high-tech U.S. forces and those of the allies and coalition partners with whom the United States seeks to operate.

A modest, reoriented concept-development and experimentation effort would optimize tactics and techniques for the increased number and

types of SSCs. Funding for strategic nuclear forces would undoubtedly be reduced.

Strategy D is praised for its willingness to use American preeminence in the service of international peace and stability and for its emphasis on conflict prevention. Its supporters argue that this strategy refocuses the U.S. military on deterrence as its most important mission. They view greater involvement in peacetime engagement, presence, and SSCs as fully legitimate military missions toward that end. Critics, on the other hand, argue that Strategy D risks a promiscuous level of U.S. military intervention that could create serious tempo strains (even for a larger force), undermine warfighting capability and credibility of the U.S. military over time, and potentially backfire by generating anti-American sentiment in reaction to U.S. interventionism.

Strategy E: Strategic Independence

Strategy E can be seen as almost the mirror-image of the priorities of Strategy D. There are, nonetheless, some remarkable similarities in their worldviews, if not in their interpretation of future events. Strategy E, like Strategy D, posits a low probability for multiple overlapping MTWs, as well as the lack of a military near-peer for the foreseeable future, to at least 2025. It also predicts the frequent occurrence of ethnic and regional conflicts, failed states, and internal wars. Unlike Strategy D, however, it sees no reason for the United States to involve its military forces in any of these less-than-vital SSCs.

Its strategy of strategic independence is predicated on the belief that there are very few threats to truly vital U.S. interests. American allies, most of which are the among the richest nations on earth, are assumed to be economically and politically capable of taking more (or total) responsibility for their own defense and in coalition operations, and for any SSCs in which they choose to involve themselves. In this worldview, the alliances and coalitions of the past are seen as increasingly burdensome entanglements and are a prime cause of threats to U.S. forces by drawing the United States into conflicts and dilemmas that have no real impact on U.S. national interests. It sees part of the resentment toward the United States—which appears to be expanding in some regions of the world—as caused by American involvement in entangling alliances and unnecessary operations.

Additionally, many allies are viewed as having been allowed to be free riders on the U.S. defense effort. Their political support may have been

important during the Cold War, but it is no longer in U.S. interests to keep funding their defense. With the collapse of the Soviet empire, a "strategic pause" in the security environment should enable the United States to focus on more pressing domestic concerns.

The proponents of Strategy E—which appear to include representatives of both the far left and the far right, the latter represented by the publications of libertarian think-tanks such as the Cato Institute—may accept that America is a global power with global interests.[18] But they have no interest in accepting the role of world policeman and see only danger in being the unequivocal provider of a nuclear umbrella for the free world. U.S. global interests are best protected and advanced primarily through economic means, although many Strategy E supporters may retain a profound skepticism toward economic globalization. To them, international leadership means moral leadership and empowering allies and others to help themselves. Direct involvement of the United States military in situations that affect less-than-vital national interests is seen as squandering U.S. credibility and power, both of which should be focused on supporting the sources of national strength: the American people, their freedom, their prosperity, and their way of life. Allies are best encouraged to pursue more independent defense efforts and to contribute more to any necessary coalition operations.

In implementation, Strategy E would not necessarily reduce overall U.S. military strength. It would see great value in maintaining, as an insurance policy, a strong military with unmatched warfighting capabilities. But it would employ the Armed Forces rarely and very selectively. Strategy E would probably call for a military prepared to fight and to win multiple MTWs in the unlikely event that they occurred. Such strength would be seen as deterring any serious challenge to vital U.S. interests. However, peacetime engagement activities would be reduced to a minimum and involvement in less-than-vital SSCs would be avoided. Where such involvement could not be avoided, the responsibility for SSCs would be handed off to coalition partners as soon as possible. Allies and coalition partners would also be expected to accept more responsibilities in preparing for possible MTWs.

One area of increased emphasis would be homeland defense, especially defense against asymmetric threats, since they could have a direct effect on the American people and could limit U.S. freedom and prosperity. Attacks on the U.S. homeland could provoke an overwhelming response

by U.S. power-projection forces.[19] However, there appears to be no overriding impetus for more than a modestly funded transformation effort.

Like other defense strategies, the primary military mission of Strategy E remains being prepared to "fight and win the nation's wars." Similar to Strategies A and C, alternative E might consider maintaining a two-MTW capability as appropriate insurance for the nation's security. Interpretations would differ, however, as to what constitutes an MTW and when to involve U.S. forces in combat. Only SSCs deemed critical to the protection of America's vital interests would be seen as legitimate missions for the U.S. military.

Homeland defense would also be a high priority in Strategy E, since it would contribute most directly to the protection of American freedom, lives, and property. A robust NMD would be a significant element of homeland defense, along with WMD consequence management, computer network defense, and counterterrorism.

Nuclear deterrence against threats to the United States and its vital interests would also be a priority and is conceptually linked to homeland defense. It is doubtful, given the underlying worldview, that there would be much faith in arms control as a permanent element of U.S. security policy.

With alliances and engagement viewed as entanglements, the following activities would receive much lower priority: alliance and coalition commitments, extended nuclear deterrence, and peacetime engagement not directly tied to vital national interests. The lack of a military near-peer competitor on the immediate horizon would also tend to make transformation a lesser priority, at least initially. However, maintaining overall U.S. technological superiority over potential threats would be considered important.

Strategy E would call for a much different military posture than today, with significantly reduced overseas presence. Instead, power-projection capabilities based in the United States would be robust and well equipped. The need for increased standoff capabilities might eventually lead to a greater emphasis on transformation, if legacy systems appeared to lack the ability to defeat evolving antiaccess challenges. These power-projection capabilities would be balanced by equally robust homeland defense capabilities.

Alternative E carries with it a series of substantially different implications for the overall force. Given the assumption that we are now in a "strategic pause," it is likely that the DOD budget would be reduced in order to provide funding for domestic priorities. A significant portion of

these cuts would come from reducing the overseas basing structure and forces stationed or deployed overseas, and curtailing most engagement activities, although any element of the force that is not structured for MTW (or vital-interest SSCs) would be a candidate for reduction or elimination.

MTW forces would be kept at high levels of readiness, and this would be assisted by great reductions in PERSTEMPO and substantial reductions in the peacetime use of LD/HD units.

Investment in selective recapitalization and modernization, rather than an overall transformation of the force, would be the preferred method of maintaining the current military technology edge. However, there would be modest funding of transformation activities to keep pace with evolving threat capabilities.

Nuclear programs tied primarily to extending the U.S. nuclear umbrella over allies might be reduced, while investment in overall strategic modernization would be increased. Funding for nuclear testing or upgrades to stockpile stewardship capabilities might also be increased.

While Strategy E is praised by some for its greater focus on homeland security, it is widely criticized for its isolationism. Critics argue that pulling back from our international commitments and bringing the bulk of U.S. forces home would severely damage important alliances, our ability to respond rapidly and effectively to crises, and ultimately our vital national interests.

Strategy F: Preventive Defense

Although Strategy F is included in the range of defense strategy alternatives suitable for examination during QDR 2001, it could be placed in a different category. For starters, it comes from a very specific source, rather than a compilation of sources and statements. Its most detailed expression appears in *Preventive Defense*: *A New Security Strategy for America* by Ashton Carter and William Perry, although it has also appeared in articles and seminar reports. It is included in our range of potential defense strategies because of the influence of its concepts and the stature of its proponents in the defense policy debate.[20]

It is also different from the other strategy alternatives in its scope and means of execution. Even its proponents admit that the particulars of preventive defense make it more of an overall national security strategy than a defense strategy to be executed by DOD. "It is a broad politico-military strategy, and therefore draws on all the instruments of foreign policy: political, economic, and military."[21] As such, many of its elements

may lie outside the scope of the actual QDR process. But "the role of the U.S. Department of Defense is central." Perry states that during his tenure as Secretary of Defense, "we established a number of programs and initiatives that made a strong start at incorporating the strategy of Preventive Defense into the activities of the Defense Department."[22]

It is a strategy with a very explicit focus on four specific threats that it considers potential mid- or long-term challenges to the survival of the United States: the return of an aggressive Russia; "loose nukes" or the uncertain security of fissionable material from the former Soviet Union; the rise of a hostile China; and the continuing proliferation of WMD, and especially the potential for WMD terrorism on U.S. soil.

But as explicit as these specific threats are in determining the character of alternative F, the underlying worldview is similar to Strategies A and C. While the security environment may always be dynamic and uncertain, there are no imminent threats (in the short term) to U.S. survival, although there are currently a host of lesser regional threats. No actual military near-peer competitor is seen as possible until beyond 2025, although a central purpose of the strategy is to prevent the two likely candidates, Russia and China, from becoming such competitors. However, the rise of asymmetric threats is recognized, especially the potential for WMD terrorism against the U.S. homeland. The high level of concern about asymmetric threats is similar to that evidenced in alternative B. The proper role of the United States in the international environment is the same as that of current Strategy A.

Key elements of Strategy F revolve around preventing future threats to survival of the United States. The strategy calls for an emphasis on shaping the international environment through peacetime engagement at a level greater than Strategy A in regard to the four long-term threats identified above. But it would not spread the engagement effort across the board as implied in Strategy D. Such a broad brush, it would be feared, could all too easily neglect the four major threats.

Alternative F would place greater emphasis than today on transformation activities, but it would do so as a hedge against the failure of preventive defense efforts rather than as a centerpiece of the strategy. There would likely be a much greater emphasis on being able to fight and to win in the face of asymmetric threats and antiaccess strategies, particularly in a WMD environment. This concern with WMD extends to homeland defense, with consequence management and counterterrorism being the foremost emphasis, although computer network defense and some limited form of

NMD (oriented toward rogue states, but potentially capable of dissuading others from greater WMD and missile investments) might also be pursued.

As part of the overall philosophy of international engagement, Strategy F would posit some involvement in SSCs, but it would be more selective than the current strategy in order to maintain resources and focus on the big four threats. As part of the preventive defense approach, which is intended to ensure that Russia and China become satisfied members of the community of nations, Strategy F would pursue further reductions in strategic offensive arms and use both bilateral and multilateral arms control agreements to further international security.

The highest priorities of alternative F would be efforts to diminish the four long-term threats to U.S. survival. For DOD, this would require peacetime military engagement to influence Russia to develop and maintain close ties to the West and to help establish a stable European security order; efforts to reduce and secure the WMD legacy of the Soviet Union in order to prevent it from falling into the hands of rogue states or terrorist groups; and steps to engage and to build a strategic partnership with an economically rising China.

U.S. power-projection forces would also be required to maintain (and to improve) the ability to fight and to win an MTW, even in the face of extensive regional WMD use and sophisticated antiaccess strategies. Homeland defense, and especially counters to WMD terrorism, would be a DOD priority. Transforming the force to deal with increasingly high-technology threats might also be a priority, but primarily as a hedge against failure of the overall strategy to prevent the rise of a military near-peer competitor.

Lower priorities for alternative F would logically include preparation for multiple MTWs; peacetime engagement that is not focused on the four primary potential threats; SSCs involving other-than-vital interests; and nuclear forces and programs beyond what is needed for basic deterrence.

Alternative F would opt for a balance between overseas presence and power-projection forces similar to the mix inherent in Strategy A. To some extent the similarities between these two alternatives are to be expected. As Secretary of Defense from 1994 to 1997, Perry set in place many of the policies later codified in QDR 1997, and he then articulated them in *Preventive Defense* not long after leaving office. The overseas presence posture of alternative F would not necessarily be radically different from today's posture; what might be different is the level and direction of engagement

activities. Rather than focus on allies and coalition partners, engagement activities might be primarily directed at neutralizing the four primary threats. For example, the United States might seek to conduct a series of combined exercises with the forces of Russia and China. There might be increased levels of cooperation with non-military as well as military counterterrorist forces of other nations.

However, the basing of U.S. forces overseas might be adjusted in ways designed to encourage more positive relations with Russia and China or to dissuade them from taking undesired actions. This could include reductions in overseas presence at certain locations, such as in Europe or the Western Pacific, or—conversely—an increase in presence in those areas in order to deter them from threatening actions toward neighboring states. In any event, the focus of presence and engagement would be adjusted toward preventive defense.

With an eye toward the proliferation of antiaccess or area-denial systems, Strategy F would tend to advocate a full-spectrum power-projection force that could overcome advanced regional defenses. Increased emphasis would be placed on counterproliferation and counterterrorism, to foreclose any WMD option as part of an antiaccess or asymmetric warfare campaign, and to neutralize any deterrence of the U.S. ability to project power by a threat to use WMD on U.S. soil.

In a fiscally constrained environment, Strategy F might shift resources from some current programs to programs specifically designed to address WMD and terrorist threats. Such a focus might require more extensive experimentation to deal with new threats and selective modernization that would hold recapitalization in abeyance until the development of even more advanced technologies. Although the concept of preventive defense does not necessarily call for a reduction in the current level of PERSTEMPO and the operational strains in LD/HD units, its proponents have indicated such reductions are necessary to prevent an eventual decline in the quality of American military personnel.[23]

This strategy is praised for placing greater emphasis on some of the more serious potential future threats to U.S. security and for attempting to make their prevention the primary focus of U.S. national security planning. The primary criticism of this strategy is like that of Strategy B: that it fails to give adequate weight to near- and mid-term threats to U.S. security, such as regional aggression, and that, in a resource-constrained environment, this might result in inadequate resources for and higher risk in mission areas, such as warfighting and SSCs.

Hybrids and Fading Distinctions

None of these six strategy alternatives constitutes rigid dogma; elements can be blended to create hybrid alternatives within the range identified. There are, in fact, potential constraints that could encourage such a blending. One area of concern that has been frequently voiced is the question of just how free the President might be in selecting among SSCs in which to involve the U.S. military. Considerable skepticism has been expressed concerning the ability of decisionmakers to resist intense media attention on what would be considered a non-vital interest under an adopted strategy alternative. Could an administration patiently explain the logic of American non-involvement in a crisis involving potential genocide, starvation, or gross injustice and repression when the eyes of the American people have focused on the crisis, or would it be forced to act regardless of its formal, declared strategy? If the latter, would one of the sharp distinctions between, for example, strategy alternatives A and B become muted?

Another constraint is available resources. Is the level of presence, engagement, and involvement in SSCs that is postulated by Strategy D affordable? Would the American people be willing to bear a greater economic burden in order to be able to "engage everywhere all the time"? Or would fiscal constraints force a scaling-down of the ambitious engagement program in alternative Strategy D, making it look more like a version of Strategy A?

Our point is that political and economic constraints could easily force a blending of the principles and priorities of the strategy alternatives as described. This in no way mitigates the need for a comprehensive assessment of the priorities and risks inherent in each of the strategy alternatives. Such assessments provide an analytical basis for actual choices. But sharp distinctions blur when plans are translated into real-world policies. As Helmuth von Moltke reportedly said about military operations: "No plan survives contact with the enemy." Some of the starker distinctions between strategy alternatives might not survive contact with practical policy constraints.

Thus the real, not merely rhetorical, differences between the strategy alternatives become most evident when the strategies are translated into program and resource allocation decisions. For example, the distinctions between alternatives A and B become very clear when the question "What levels of funding would be applied to which priority mission?" is asked. Again, this points to the need to examine the linkage

between strategy alternatives and their associated integrated paths of programmatic implications.[24]

Conclusion

The challenge and opportunity of QDR 2001 require closely linking the strategy selected and the force structure and management choices that define the defense program, as well as identifying the areas and degrees of risk that will be accepted in making those choices. Whatever strategy is adopted, the administration must strive to do three things well: to articulate the strategy in a way that makes it understandable and acceptable to the American people; to derive force sizing criteria and to make acquisition and force management choices that implement the inherent priorities of the strategy; and to be explicit as to the risks—military, political, or economic—that it is willing to accept in implementing the strategy. Execution of these three imperatives may be the most critical factor in the success of the next QDR.

Being explicit as to priorities and risks could make the administration vulnerable to public criticism (both just and unjust) and posturing by political opponents. It also disallows the fuzzy rhetoric that blurs the clear identification of winners and losers in the competition between ideas and programs. Egos and budget shares could get bruised. A considerable degree of political courage is required, but the potential dividend of such explicitness—a coherent, sustainable, supported, and successful defense policy that will guard American interests, deter war, and preserve a just peace—is worth the risks.

Notes

[1] For example, see Bryan Bender, "U.S. defence review to be strategy-driven," *Jane's Defence Weekly* 34, no. 5 (August 2, 2000), 5; Williamson Murray, "Preparing to Lose the Next War," *Strategic Review* 26, no. 2 (Spring 1998), 51–62; Robert P. Haffa, Jr., "Planning U.S. Forces to Fight Two Wars: Right Number, Wrong Forces," *Strategic Review* 27, no. 1 (Winter 1999), 15–21; and Michael G. Vickers and Steven M. Kosiak, *The Quadrennial Defense Review: An Assessment* (Washington, DC: Center for Strategic and Budgetary Assessments, December 1997), 14–16.

[2] Definition of *strategy* from United States, Joint Chiefs of Staff, *Department of Defense Dictionary of Military and Associated Terms*, Joint Publication 1–02 (June 10, 1998), 429–430.

[3] Paul Seabury and Angelo Codevilla, *War: Ends and Means* (New York: Basic Books, 1989), 97.

[4] See chapter 7 on assessing risk.

[5] The QDR legislation requires that the Secretary of Defense submit a final QDR report to Congress by September 30, 2001. Even in the absence of a congressional deadline, a new administration would have strong incentives to finish the review by the late summer or early autumn in order to influence the building of the service Program Objective Memoranda and the new President's first full budget submission.

[6] Terms such as *presence* and *engagement* are often used rather loosely. Following a survey and analysis of existing sources, we developed or adopted specific definitions for the terms used to describe

these strategy issues. We define *overseas presence* as military forces permanently stationed or rotationally or intermittently deployed overseas for the purposes of influence, engagement, reassurance, deterrence, and initial crisis response. We define *peacetime military engagement* as encompassing all U.S. military activities designed to enhance constructive security relations and promote broad U.S. security interests, including activities such as combined training and education, military-to-military interactions, security assistance, and various other programs. U.S. overseas presence forces are often also involved in conducting peacetime military engagement activities.

[7] We define *smaller-scale contingencies* as military operations encompassing the full range of joint/combined operations beyond peacetime engagement activities, but short of major theater war. Such operations include show-of-force operations, coercive campaigns, limited strikes, noncombatant evacuation operations, no-fly-zone enforcement, maritime sanctions enforcement, operations to deal with large migrations of populations, counterterrorism operations, peace operations, foreign humanitarian assistance and disaster relief operations, and support to U.S. domestic civil authorities.

[8] We define *major theater war* as U.S. military operations to deter and defeat large-scale aggression by a state or coalition that threatens an ally or the stability of a region. MTW involves joint and potentially combined military operations that project, apply, and sustain substantial U.S. combat and combat support forces for high-intensity conflict.

[9] We define *homeland security* (as it relates to the DOD role) as military operations and activities involved in deterring, preventing, defending against, and responding to attacks on the U.S. homeland. These operations and activities could include NMD, territorial defense (air, land, sea, space), critical infrastructure protection such as computer network defense, selected counterterrorism activities, consequence management (CM), and other activities in support of domestic civil authorities.

[10] We define *transformation* as the process by which DOD seeks to harness the revolution in military affairs (RMA) to make fundamental changes in technology, operational concepts and doctrine, and organizational structure in order to better prepare the United States to meet future challenges. There is, however, considerable disagreement and debate as to what properly constitutes military transformation.

[11] Confusingly, the term *engagement* is used in several different ways in the delineation of the "shape, respond, prepare" strategy. On the level of overall national security, engagement is used to describe the elements of an activist, internationalist security policy (as in *A National Security Strategy of Engagement and Enlargement*, the pre-1997 title of the President's published national security strategy). This could be considered engagement writ large. On the level of national military strategy, engagement is seen as the use of military forces to interact in peacetime as a politico-military means of positively affecting regional stability, bolstering friends and allies, and deterring and dissuading potential adversaries. This makes the term nearly synonymous with *shaping*. On the theater level, peacetime military engagement is seen as the day-to-day interaction of U.S. military forces with foreign militaries, generally in the form of combined training, exercises (in both their supporting and deterring functions), or other professional contacts.

[12] For a detailed discussion of post-Cold War alliance and coalition formation, see Stephen M. Walt, "Coalitions," in Patrick M. Cronin, *2015*: *Power and Progress* (Washington, DC: National Defense University Press, 1996), 85–114.

[13] See Chairman, Joint Chiefs of Staff, *Joint Vision 2010* (Washington, DC: Department of Defense, 1996), and *Joint Vision 2020* (Washington, DC: Department of Defense, 2000).

[14] See discussion in Secretary of Defense William S. Cohen, *Annual Report to the President and Congress, 2000* (Washington, DC: Department of Defense, 2000), 123–136.

[15] For example, see Michael J. Lippitz, Sean O'Keefe, and John P. White, "Advancing the Revolution in Business Affairs," Chapter 7 in Ashton B. Carter and John P. White, *Keeping the Edge: Managing Defense for the Future* (Cambridge, MA, and Stanford, CA: Preventive Defense Project, 2000; forthcoming, Cambridge, MA: MIT Press, 2001).

[16] See George W. Bush, "A Period of Consequences," speech delivered at The Citadel, Charleston, SC, September 23, 1999.

[17] On the details of asymmetric threats and antiaccess strategies, see chapter 3.

[18] See Ivan Eland, "Tilting at Windmills: Post-Cold War Threats to U.S. Security," *Policy Analysis* no. 332 (February 8, 1999), <www.cato.org>.

[19] This is sometimes referred to as the "Pearl Harbor effect," meaning that an attack on U.S. territory would stiffen—not shake—U.S. resolve. Colin Gray argues that the American people would likely demand a "healthily disproportionate action" in response to WMD terrorism. Colin S. Gray, "Combatting Terrorism," *Parameters* 23, no. 3 (Autumn 1993), 22.

[20] To develop a strategy comparable to the other strategic alternatives, we have added elements to the version laid out in the publications by former Assistant Secretary of Defense Ashton B. Carter and former Secretary of Defense William J. Perry. In doing so, we have tried to stay as close as possible to the assumptions, assessments, and overall philosophy of the original authors. Ultimately, however, Strategy F may deviate from ideas that Carter and Perry would support. As a small way of indicating this difference, we render "preventive defense" in lower case as opposed to using initial capitals in the term "Preventive Defense" as Carter and Perry do in their writings.

[21] Ashton B. Carter and William J. Perry, *Preventive Defense*: *A New Security Strategy for America* (Washington, DC: Brookings Institution Press, 1999), 18.

[22] Ibid.

[23] Ibid., 214.

[24] The NDU QDR 2001 Working Group elected to examine in detail the force structure and programmatic implications of only the first four strategy alternatives (A, B, C, and D). While Strategy E, which we dubbed "strategic independence," is a hardy perennial in the U.S. defense and foreign policy debate, it does not appear at present to have the standing that would make it a plausible alternative for the Bush administration. Strategy F, preventive defense, is more of a broad national security strategy than a defense strategy that provides concrete guidance on how to size, structure, and employ the U.S. military. The adoption of alternative F as an overall national security strategy could conceivably result in the development of a concurrent defense strategy along the lines of one of the other strategy alternatives presented. For more on strategy-driven integrated paths, see chapter 13.

Chapter Six

Sizing Conventional Forces: Criteria and Methodology

by Michèle A. Flournoy and Kenneth F. McKenzie, Jr.

For better or for worse, those who will do the hard work in the 2001 QDR of translating strategic priorities into force structure options will have a huge audience as they do their work. To ensure that key judgments and decisions are made explicitly and in a manner that reflects the strategy's guidance on where to place emphasis and where to accept or to manage a degree of risk, they will need to create a process for force sizing that is both rigorous and transparent. The purpose of this chapter, then, is to outline a methodology for sizing conventional forces to meet the requirements of a given strategy. This methodology enables force planners to translate the priorities of a chosen strategy—whatever those priorities may be—into discrete force structure options that can then be further assessed through modeling and analysis.[1]

This chapter reviews four alternative approaches to force sizing. Because each has its strengths and weaknesses, all four approaches informed the development of the NDU QDR Working Group's proposed methodology, which is next described. The chapter details each step in the force sizing process and highlights the key decisions and judgments that must be made along the way.

Four Perspectives

One can view the challenge of sizing U.S. conventional forces from at least four different perspectives. Each has an internally consistent approach to generating force structure, based on varying worldviews and assumptions about missions, scenarios, and capabilities. Comparing the strengths and weaknesses of these approaches raises a number of key choices that were central to the development of the force-sizing methodology that we propose later in this chapter.

Threat-Scenario Approach

The threat-scenario approach sizes U.S. forces based on specific threats. It uses validated threat estimates provided by the national intelligence community to identify specific threat scenarios to which the U.S. military might have to respond in the near to mid term. This methodology then prioritizes scenarios in accordance with the strategy, placing greater emphasis on those scenarios that fall into priority-mission categories. Once priority-threat scenarios are identified, critical assumptions about warning, concurrency, and separation time are established and specific requirements for the U.S. military are determined. The final step is identifying one or more force structure options that can meet these requirements.

The advantages of this approach to force sizing center around the high credibility of scenarios derived from validated intelligence assessments. This approach tends to generate a force that emphasizes contingency response capabilities and warfighting competencies. Its disadvantages stem from the fact that focusing on specific scenarios may yield forces (and rationales for those forces) that are not readily adaptable to change, such as unforeseen changes in the security environment. Indeed, the near-term focus of this approach tends to neglect preparation for long-term threats and hedging against uncertainties. Perhaps most important, it also neglects the utility of military activities to shape the international security environment: it sizes forces to respond to foreseen threats, not to prevent or deter them.

Regional-Missions Approach

The regional-missions approach sizes U.S. conventional forces based on prioritized regional requirements. Based on current geographical divisions outlined in the Unified Command Plan (UCP), this approach sizes the force according to identified military requirements in five key regions: Western and Eastern Europe (U.S. European Command), Asia and the Pacific Basin (U.S. Pacific Command), the Middle East and Central Asia (U.S. Central Command), Central and South America and the Caribbean (U.S. Southern Command), and the continental United States. For each region, two principles are applied. The first is sizing for peacetime engagement and presence: the day-to-day demands placed on the military. The second is sizing for contingency operations in the same regions, including CONUS-based forces and strategic reserves.

These principles are applied in the following manner. First, baseline and minimum engagement and presence forces are calculated for each

theater. Baseline forces are those that the regional commander in chief requires to undertake day-to-day presence and engagement activities in the region. Minimum forces are those stay-behind forces that the CINC would need to ensure stability in the region, even in the midst of one or more major wars elsewhere. Second, forces for anticipated smaller-scale contingencies are derived for each theater. Finally, potential major theater war requirements are determined for each theater. These requirements are then viewed in combination, on a global basis, to determine both relative priorities and how forces would be allocated across regions. As part of this process, theater-level shortfalls and contingency and support forces are identified, from other theaters or from the United States.

This approach captures both the shaping and contingency-response requirements of any given strategy. In addressing a broad range of potential scenarios and options, it emphasizes regional CINC needs. On the other hand, the decentralization inherent in this approach emphasizes local requirements and, in a resource-constrained environment, begs for additional prioritization to adjudicate competing requirements across regions. This bottom-up compilation of many diverse requirements may also be difficult to summarize in a succinct and compelling rationale for the size and shape of U.S. forces. Lastly, the near-term focus of this approach tends to reinforce current concepts of operations (what we need today) more than innovative approaches to anticipated future challenges (what we may need for tomorrow).

Generic-Missions Approach

The generic-missions approach sizes forces based on generic missions derived from the priorities of a particular strategy. Based on strategy-driven guidance, this approach sizes the force for the missions or activities explicitly identified in the strategy, such as MTWs, homeland security, overseas presence, peacetime engagement, SSCs, and transformation. After these missions or activities are identified, they are prioritized according to the dictates of the strategy. Forces are allocated to each category in priority order. Areas of potential overlap—generally forces that are appropriately given more than one mission—are identified, for example, naval forces that would provide overseas presence in peacetime and also be part of the initial response to deter or fight a war.

The principal advantage of this approach is that it is highly sensitive to strategy guidance and can effectively capture all of the priority missions identified. But it also has the defects of its virtues. For example, the sensitivity of this approach to a particular strategy's priorities can be a

weakness if it yields forces that do not have the flexibility or balance to deal with the unexpected—that is, to respond effectively to developments not anticipated by the strategy.

Future-Capabilities Approach

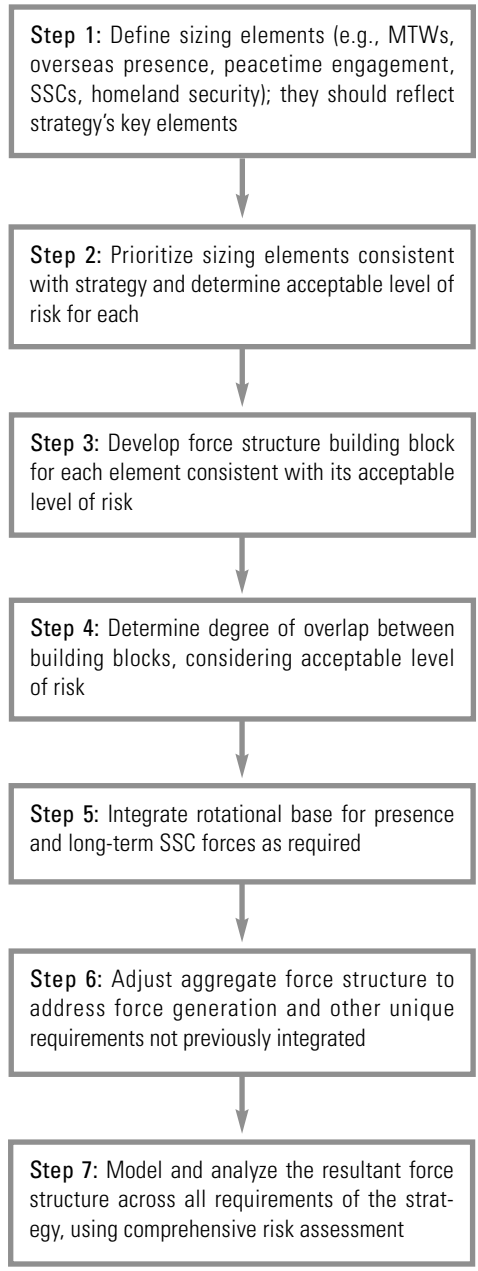
The future-capabilities approach sizes forces based on capabilities required to deal effectively with future threats and opportunities. Under this approach, the characteristics of the future security environment (for example, in 2025) are outlined, and anticipated priority military missions and operating assumptions are identified. Force structure options are then developed based on the capabilities required to carry out these missions. This process is generally oriented toward the future security environment considered most likely, but it also permits sizing forces to hedge against wildcard developments, that is, less likely but dangerous futures.

Because this approach focuses on longer-term threats to U.S. security, it can be more difficult to implement. No crystal ball provides a clear and certain picture of the military challenges that we will confront in the future, and the more distant the future, the murkier the picture. There are also political sensitivities associated with planning against potential future adversaries who are not yet adversaries. This uncertainty places a premium on hedging against a range of future possibilities rather than optimizing the force for one anticipated or hoped-for future. In addition, if applied independently, this approach might not yield a force well suited to near-term contingencies, but any force-sizing approach that we apply must be able to negotiate the near term. No sitting Secretary of Defense can take on an unacceptable level of risk today in order to better prepare the U.S. military for tomorrow: he or she must strike a balance. Therefore, this approach is probably most useful not as a stand-alone approach, but as one that complements others that capture near-term requirements as well.

Integrating the Approaches

Each of these four approaches looks at the problem of force sizing from a different perspective, and each has unique strengths and weaknesses. However, no single approach seems strong enough to stand on its own merits. For this reason, the working group developed a composite force-sizing methodology that integrates elements of all four approaches. It seeks to draw on the strengths of each approach while avoiding its most serious weaknesses. DOD does not yet have a common or approved methodology for force sizing, so we offer this approach as a useful starting point for force planners and decisionmakers in the QDR.

Figure 6–1. Steps for Force Sizing



Proposed Methodology

Each of the four defense strategy alternatives described in chapter 5 offers a different set of priorities for the U.S. military and DOD. Once the Bush administration determines the defense strategy that it wishes to pursue, its challenge is to translate its priorities into criteria for sizing the force and allocating resources within the DOD. Moreover, it will face critical decisions about where to place emphasis and where to accept or to manage risk.

This section describes a step-by-step methodology for sizing U.S. conventional forces (see figure 6–1). This approach to force sizing can be used to support any strategy alternative chosen by the Bush administration. As this seven-step process sizes conventional forces to the requirements of a given strategy, it makes the most critical policy decisions and military judgments transparent and unavoidable.

- Step 1 defines the terms that form the language of force sizing. These sizing elements should reflect the key missions and activities identified in the strategy, such as MTWs, homeland security, overseas presence, peacetime engagement, SSCs, and transformation.
- Step 2 prioritizes these elements to reflect the strategy's guidance on where to place emphasis and where to accept or manage a degree of risk. As part of this process, a target level of acceptable risk is established for each element. For example, in a resource-constrained environment, one might aim for low or low-to-moderate risk in a strategy's highest priority areas while accepting moderate-to-high or high risk in some lower priority activities.[2]
- Step 3 develops individual force structure building blocks for each of the sizing elements, consistent with the target level of risk.
- Step 4 melds the discrete building blocks of forces based on key considerations, such as assumptions about which forces would disengage from SSCs to redeploy to MTWs, which forces would swing between MTWs (that is, take part in one campaign and then quickly redeploy to another), or which forces would be dual-tasked (such as forward presence forces also available for MTWs). Here again, the target level of risk must be considered as the building blocks are adjusted, because a low-risk force for a given set of missions may be markedly different from a high-risk force.
- Step 5 develops the rotational base requirements for forces involved in overseas-presence and long-term SSC operations. For example, how many carrier battle groups are required in the force to keep three of these groups forward-deployed at any given time? How many Army brigades are needed to support one forward-deployed in Bosnia on an ongoing basis?

- Step 6 assesses the forces necessary to generate the combat and support forces required by the strategy. Any unique capabilities and requirements that were not fully integrated as building blocks should also be included here, such as training units (supporting force accession or training missions), higher-echelon maintenance and support units, and strategic mobility forces.
- Step 7 evaluates the ability of the resultant force structure to support the associated strategy. An iterative process of wargaming, modeling, and analysis determines whether strategic priorities and areas of emphasis are accurately reflected in the force structure. The force structure can be further adjusted if target risk levels are not met initially or if they are subsequently modified for specific sizing elements.

Step 1: Definition of Sizing Elements

The key elements used in force sizing should be the priority missions and activities assigned to the U.S. military by a given strategy. Obviously, these elements—how they are defined and what priority they are given—will vary by strategy. In developing its approach to force sizing, the NDU QDR Working Group adopted or developed several definitions based on the range of missions and activities that the U.S. military currently prepares for or undertakes. These definitions are provided below to illustrate the first step in the methodology, recognizing that some of these terms may change or be defined differently in a future strategy.

Any U.S. defense strategy will include deterring and, if necessary, fighting and winning major wars as a key element. In the absence of an official DOD definition, the NDU Working Group defined an *MTW* as U.S. military operations to deter and to defeat large-scale aggression by a state or coalition that threatens an ally or the stability of a region; it involves joint and combined military operations that project, apply, and sustain substantial U.S. combat and combat support forces for high-intensity conflict. This definition was crafted to support a broader MTW scenario set than the two canonical MTWs that are currently the primary basis for U.S. defense planning (Iraq and Korea).

Another key element of any defense strategy is *overseas presence,* which we define as the military forces permanently stationed or rotationally or intermittently deployed overseas for the purposes of influence, engagement, reassurance, deterrence, and initial crisis response. Because many overseas-presence forces require a substantial rotation base, this element has potentially profound implications for the size of the associated force.

In the past, U.S. forces have been sized predominantly for two elements alone: warfighting and presence. Other missions and activities have been treated, explicitly or implicitly, as lesser included cases in sizing the force: it was assumed that forces sized for warfighting and presence would be sufficient to meet any other demands. However, the increasing peacetime demands placed on the U.S. military in the last decade have called this assumption into question, with increases in so-called low density/high demand (LD/HD) assets, and chronic operations and personnel tempo strains in parts of the force. Even under a strategy of more selective engagement, we propose including peacetime demands explicitly in the force-sizing process so that decisions about whether to treat them as lesser included cases are conscious and explicit.

Peacetime demands can be thought of in at least two categories. The first of these is *the full range of military operations beyond peacetime military engagement but short of MTW.* This category of operations has been known by many different names over the last decade, from low-intensity conflict, to military operations other than war, peace operations, and smaller-scale contingencies (SSCs). The current Defense Planning Guidance (DPG) identifies more than a dozen kinds of SSCs, as indicated in table 6–1.

The second category is *peacetime military engagement:* U.S. military activities designed to enhance constructive security relations and to promote broad U.S. security interests, including activities such as combined training, military-to-military interactions, and various other programs.

At least one of the defense strategy alternatives outlined in chapter 5 would place greater emphasis on homeland security. Thus, homeland security should also be treated as a potential element in force sizing. While its effect on the size of U.S. conventional forces overall might be only marginal, its effect on the size and shape of certain elements of the force may be substantial. We defined the *military elements of homeland security* as those military operations and activities involved in deterring, preventing, defending against, and responding to attacks on the U.S. homeland, including national missile defense, territorial defense (air, land, sea, and space), critical infrastructure protection, selected counterterrorism activities, consequence management, and other activities in support of domestic civil authorities.

The Bush administration may also want to consider, as part of its force-sizing calculus, the requirements of transformation, that is, the set of activities by which DOD seeks to harness the revolution in military affairs to make fundamental changes in technology, operational concepts

Table 6–1. Smaller-Scale Contingencies: Operational Categories

Intervention Operations	Opposed Intervention/ Coercive Campaign	Deploy forces to rapidly restore legitimate governments, coerce or defeat an opposition force, and restore stability.	Just Cause (Panama) 1989; Allied Force (Kosovo) 1999
	Humanitarian Intervention	Provide security for delivery of humanitarian assistance in the midst of an ongoing conflict.	Restore Hope (Somalia) 1992; Provide Comfort (Iraq) 1991
Peacekeeping Operations (large)	Peace Accord Implementation	Assist in implementing military aspects of an agreement to end a conflict by overseeing terms of the agreement.	Bosnia IFOR 1995; Restore Democracy (Haiti) 1994
	Follow-on Peace Operations	Long-term operations to enhance or maintain stability in region long enough for local authorities to gain independent, effective control.	Bosnia SFOR 1996
Peacekeeping Operations (small)	Interpositional Peacekeeping	Observe and patrol buffer zones between former warring parties to ensure cease-fire terms and prevent spillover.	Sinai since 1982; Macedonia since 1993
Humanitarian Operations	Foreign Humanitarian Assistance	Relieve or reduce the results of disasters or other endemic conditions that seriously threaten life or great damage.	Support Hope (Rwanda) 1994; Safe Haven (Cuban refugees) 1994
	Domestic Disaster Relief	Lawful temporary support undertaken when an emergency overtaxes the capabilities of civil authorities.	Hurricane Andrew 1992; Task Force Wildfire (western states) 1994
Other Operations (long)	No-fly Zone	Patrol airspace to enforce restrictions placed by the international community on a government or entity.	Southern Watch (Iraq) since 1991; Deny Flight (Bosnia) since 1993
	Maritime Intercept Operations	Patrol seas to enforce restrictions placed on a government or entity; includes migrant pickup/enforcing sanctions.	Sharp Guard (Adriatic) 1992; Arabian Gulf 1991–98
	Support to Domestic Authorities	Long-term support for domestic authorities where the military is not the lead governmental agency.	Counterdrug Support
Other Operations (short)	Non-combatant Evacuation Operations	Extract American and/or other citizens from unstable areas where commercial transport is unsafe/unavailable.	Assured Response (Liberia) 1996; Silver Wake (Albania) 1997
	Shows of Force	Deploy forces to a crisis area to deter some action or signal commitment and resolve and to enhance military options.	Iraq 1998; China/Taiwan 1996; Vigilant Warrior (Iraq) 1994
	Strike	Short-duration attacks (air, land, or sea) against high-value targets or in response to an adversary's action.	Eldorado Canyon (Libya) 1986; Desert Strike (Iraq) 1996

Source: Defense Planning Guidance.

and doctrine, and organizational structure. Specifically, should the administration set aside forces for concept development, experimentation, and reconfiguration, or should it treat such activities as additional rotational demands on the operational force? If transformation is a high priority in administration strategy, it will need to be factored into calculations of overall force structure.

Step 2: Prioritization

The second step in sizing the force is to prioritize the various sizing elements in accordance with the strategy and to determine the level of acceptable risk for each element.[3] This step yields the criteria that will be used to develop one or more force structure options. Force-sizing criteria are often expressed as equations designed to indicate the number and types of operations that the U.S. military should be able to conduct concurrently, such as 2 MTWs, or 1 MTW + 1 halt + 3 SSCs (where halt refers to an operation in its halt phase, to halt an adversary's advance). Missions or activities not included in the equation are generally treated as lesser included cases: things that the military may be required to do, but for which additional forces are not provided.

If, however, force-sizing criteria are to influence the resource allocation process more accurately, it may be more useful to think of them as a list of explicit resource priorities rather than as an equation. The strength of this more vertical approach is that it explicitly identifies a lowest-priority category as the principal area in which a greater degree of risk would be accepted or managed, if resources are constrained. For example, each of the following force-sizing criteria would be consistent with the current "shape, respond, prepare now" defense strategy that we have called Strategy A:

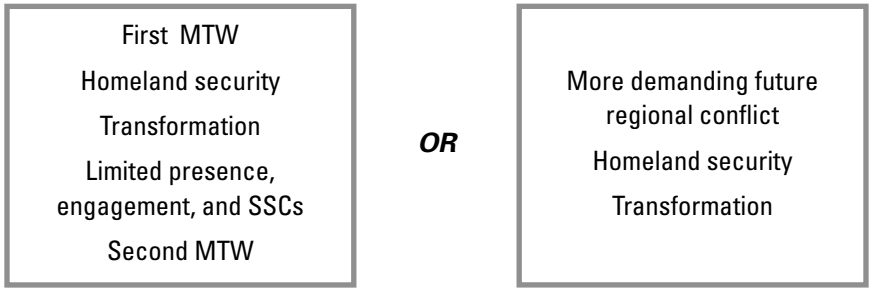
First MTW Second MTW Full peacetime engagement, presence, and SSCs	***OR***	First MTW Full peacetime engagement, presence, and SSCs Second MTW

In practice, however, these two sets of priorities could have very different implications for resource allocation and U.S. conventional forces. In the first case, DOD would seek to provide all necessary resources for

the first MTW, then for the second MTW, and only then for the level of peacetime operations presently engaged in, such as presence, engagement, and SSCs. In a resource-constrained environment, this approach could result in serious tempo strains in parts of the force, particularly for those assets in highest demand in peacetime, and could mean an inability to maintain desired levels of overseas presence and military engagement around the globe. In the second case, DOD would seek to provide full resources for the first MTW, then for peacetime operations, and only then for the second MTW. Here, a higher priority is given to what the U.S. military now does day-to-day in support of shaping and responding. In practice, this might translate into greater resources for the rotation base and high-demand assets required to sustain the prescribed level of presence, engagement, and SSCs. If resources were constrained, it might also mean accepting a greater degree of risk in the second MTW in some form, perhaps by dual-apportioning forces (assigning some forces roles in both MTWs), relying more on the Reserve components, reducing the number of forces allocated to the second war, or some other approach.[4] Strategy A presents a fundamental choice between sizing the force primarily for warfighting or sizing the force for a combination of warfighting and priority peacetime demands.

Another critical factor in sizing the force for Strategy A, as well as the other strategies, is the MTW scenario set. If it were broadened beyond the two canonical cases to include a wider range of threats, end-state objectives, operating conditions, and concepts of operation, the same force-sizing criteria might yield a force very different from today's force. In practice, this would mean looking across a number of scenarios to identify the most demanding combinations of challenges for each element of the force, and then sizing each element accordingly. For example, the Navy might be most stressed by a combination of two MTWs involving the closure of sea lines of communication and cross-straits aggression (as in a hypothetical case of aggression across the Strait of Hormuz or the Taiwan Strait). The Army might be most stressed by cases involving defeating large land invasions, supporting a regime change, and restoring stability on the ground post-conflict (as in the canonical cases of Korea or Iraq). Sizing different elements to meet the most stressing combination of plausible MTW challenges would make force sizing a more iterative process in which the capabilities of U.S. forces would be optimized across a larger range of scenarios and challenges.

Strategy B suggests a different set of force-sizing criteria alternatives. Each of the following sets of criteria would be consistent with a strategy of engaging more selectively and accelerating transformation:

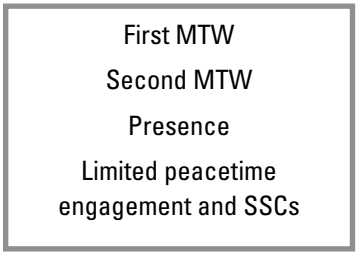


Here, again, the two different sets of priorities would have very different implications for the size and shape of the U.S. military and for resource allocation more broadly. In the first case, DOD would seek to provide all necessary resources for the first MTW, then DOD support to homeland security, then transformation (for example, standing experimentation forces, or forces undergoing reorganization and retraining), then a more selective level of presence, engagement, and SSCs, and finally a second MTW. In a resource-constrained environment, this would effectively shift resources from the second MTW to higher-priority areas, such as homeland security and transformation. Strategy B might manage risk in the second MTW by adopting a limited end-state objective (such as restoring the pre-war border) and an alternative concept of operations that would reduce the U.S. forces required to fight and to win the war.

The second set of priorities would take a fundamentally different approach to force sizing, consistent with the Strategy B emphasis on preparing for more serious future threats, such as conflict with a more capable regional foe or near-peer competitor. This future capabilities approach would identify the capabilities that the U.S. military would need to fight and to win a major war against a much more capable regional foe in the 2015–2020 timeframe, and then reorient and reshape the current force incrementally toward that end. This approach would increase investment in priority future capabilities, in preference to those capabilities with declining relevance. It would also put a premium on forces for homeland security and transformation. Both of these force-sizing criteria for Strategy B would size U.S. forces for a mix of warfighting and other priority demands. The fundamental choice here is one of timeframe: Should U.S. forces be sized

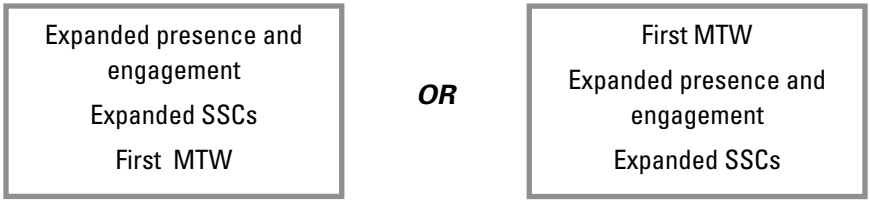
primarily to meet near and mid-term demands, or rather according to anticipated future capability requirements?

Strategy C—"Engage More Selectively and Strengthen Warfighting Capability"—is less ambiguous about the criteria it would use to size U.S. conventional forces:



First, this approach would seek to provide all necessary resources for the capability to fight two major theater wars; second for overseas presence geared toward deterrence and crisis response, and third for a more selective level of peacetime military engagement and SSCs in support of U.S. vital interests. Here, the critical issues lie in how requirements are defined in each of these categories. The choice of MTW scenarios would be critical, as would the definition of presence requirements. In a resource-constrained environment, this approach would seek to manage risk primarily in the category of peacetime engagement and SSCs. In practice, this might mean accepting higher tempo and readiness strains in high-demand units and personnel, reducing training for and potentially the quality of performance in SSCs, and cutting back on military-to-military interactions with allies and partners.

Strategy D—"Engage Today to Prevent Conflict Tomorrow"—suggests a radically different choice of force-sizing criteria alternatives that would give much greater emphasis to sizing U.S. forces to meet the requirements of an expanded level of involvement in presence, engagement, and SSCs:



The first case would give highest resource priority to the peacetime operations and activities of the U.S. military, while also maintaining a core warfighting capability as a hedge against the possibility that even a more active deterrence strategy could fail. In the second case, DOD would first seek to provide all necessary resources for a single MTW—preserving a core warfighting capability—and then the expanded levels of presence, engagement, and SSCs called for by the strategy. Here, the fundamental choice is whether to preserve a core warfighting capability as a top priority, a choice that would likely hinge on judgments about how much warfighting capability would already reside in forces designed primarily for presence, engagement, and SSCs.

This process of prioritization raises several crucial force-sizing decisions, including whether:

- to size the force primarily for warfighting;
- to size the force for both warfighting and priority peacetime demands, such as presence, engagement, SSCs, and homeland security as identified and prioritized by a given strategy;
- to size and to shape the force based on required capabilities for the future;
- to size the force primarily for what the military does daily while maintaining a core warfighting capability.

Part of the prioritization process is setting a target level of acceptable risk for each element of the force-sizing criteria. These will vary by strategy, but only a low-to-moderate level of risk might be accepted in a strategy's highest priority areas, whereas higher levels of risk might be accepted or managed, if necessary due to resource constraints, in one or more lower priority areas. Such judgments about acceptable levels of risk must be made as explicit as possible to enable sound force structure decisions that reflect the priorities of a given strategy and the desires of the DOD senior leadership.

Step 3: Developing Force Building Blocks

Once the Bush administration has a prioritized set of force-sizing criteria and an understanding of where it is willing to accept or to manage, at least in principle, a degree of risk, the next step is to develop force building blocks for each element of the criteria. What follows seeks to highlight some of the issues that will need to be considered and judgments that will need to be made along the way with regard to MTWs, overseas presence, SSCs, homeland security, and, in some cases, transformation.

Major Theater Wars

Several key factors must be considered in developing a force building block for major theater wars: the number of MTWs for which to be prepared, assumptions about concurrency if planning for the possibility of more than one MTW at a time, the level of acceptable risk for each MTW, the overall scenario set, and the particulars of individual scenarios.

The number of MTWs to be sized for and the general degree of concurrency should be spelled out in the strategy, whereas the target level of risk for each MTW should be developed in prioritizing the sizing criteria during Step 2. For example, one standard would require the ability to conduct two overlapping MTWs, both at low-to-moderate risk; another would require the ability to conduct two overlapping MTWs, the first at low-to-moderate risk and the second at moderate-to-high risk. In all cases, the target level of risk may have significant implications for the size and nature of the MTW force building block. Accepting low-to moderate-risk in an MTW may yield one type of force building block, whereas accepting high risk may yield quite another. How general terms like *nearly simultaneous* or *overlapping* are translated into specific assumptions about how many days, weeks, or months might separate two or more major wars will also have a major impact on force requirements.

Developing force building blocks for MTWs will be more challenging if, as we recommend, the Bush administration seeks to optimize the force across a range of MTW scenarios broader than the canonical Iraq and Korea cases. This would require a substantial shift in approach, that is, from designing forces to meet the requirements of two specific cases, to developing a portfolio of forces and capabilities that can meet the most stressing requirements of a wider variety of potential warfighting scenarios. Based on our assessment of the future security environment,[5] we recommend that the MTW scenario set include not only cases of large-scale, cross-border land invasions by enemy armored forces, but also cross-straits aggression involving enemy missile, air, naval, and, possibly, amphibious forces. Our assessment of future threats also suggests that the U.S. military should plan to be able to operate in the face of delayed or denied access to key bases and facilities in the theater, as well as adversary attempts to thwart U.S. power projection through attacks on U.S. deployment sites and en-route infrastructure.

In practice, developing forces to meet the demands of such a broadened scenario set involves identifying the most stressing MTW cases for each type of force—heavy ground forces, light ground forces, amphibious

forces, naval forces, air forces—and then sizing and shaping a force building block for that type of force accordingly. For example, whereas heavy ground forces might be most stressed by scenarios involving an armored land invasion, naval forces might be more stressed by cases of cross-straits aggression, naval blockade, or closure of sea lines of communication. In each case the Bush administration would need to consider individual force requirements in the context of the joint campaign. Such an approach has the potential to yield a more robust set of forces and capabilities that can meet the most stressing aspects of a broader range of potential future challenges.

The particulars of each warfighting scenario will require that at least six key factors be assessed: adversary objectives, forces, capabilities, and concepts of operations (including the use of weapons of mass destruction or other antiaccess measures); U.S. and allied end-state objectives and concepts of operations; anticipated strategic warning time; level and timing of U.S. mobilization; campaign phasing and synchronization; and allied and coalition contributions. Each of these variables can significantly affect the size and shape of the forces required.

Finally, in developing the MTW and other force building blocks, it will be important to size not only major combat elements, such as divisions, wings, and carrier battle groups, but also other combat and critical support forces and capabilities (such as special operations forces, logistics forces, tankers, airlift and intelligence, surveillance, and reconnaissance capabilities).

Overseas Presence

Developing a force building block for overseas presence involves several steps. The first is to understand whether the Bush administration's strategy calls for any changes in the requirements for U.S. forces deployed permanently or rotationally overseas. Does the strategy require changes in U.S. overseas posture based on existing or anticipated changes in the security environment, new regions of emphasis in U.S. security policy, or a reassessment of priority missions and activities of the U.S. military? Secondly, is the administration willing to consider new ways of meeting overseas-presence requirements, such as substituting one kind of force for another, forward-stationing additional elements of the force, or keeping platforms forward for longer periods while rotating their crews? Our examination of defense strategy alternatives in chapter 5 suggests that while the overall need for the U.S. military to be forward-deployed will not be called into question in the 2001 QDR, the particulars of overseas presence—both the specific

requirements and how those requirements are met—may be fertile ground for change.[6]

Smaller-Scale Contingencies

The primary consideration in developing a force building block for smaller-scale contingencies is the notional level of U.S. commitment to SSCs that is expected to result from the chosen strategy. Based on the four principal strategy alternatives examined in chapter 5, three notional levels of U.S. military involvement in SSCs were developed. The three levels of commitment were designated as *limited*—somewhat less than today, based on the more selective engagement called for in Strategies B and C; *full*—approximately equivalent to today, as reflected in Strategy A; and *expanded*—greater than today, reflecting the more extensive U.S. military engagement called for by Strategy D. Table 6–2 outlines the three levels.

Table 6–2. Smaller-Scale Contingencies: Levels of Involvement

		National Concurrent Level of Commitment		
Category	**Type**	**Limited**	**Full**	**Expanded**
Intervention Operations	Opposed Intervention	1	1	1
	Humanitarian Intervention			
Peacekeeping Operations (large)	Peace Accord Implementations			1
	Follow-On Peace Operations		1	1
Peacekeeping Operations (small)	Interpositional Peacekeeping	1	2	2
Humanitarian Operations	Foreign Humanitarian Assistance	1	1–2	1–2
	Domestic Disaster Relief	1	1	1
Other Operations (long)	No-fly Zone	1	2	2
	Maritime Intercept Operations	1	1	1
	Support to Domestic Authorities	1	1	2
Other Operations (short)	Non-Combatant Evacuation Operations	1–2	1–2	1–2
	Shows of Force (large)	1	1	1
	Strike	1	1	1

While it would be impossible to predict a president's actual decisions on use of force, it is important that the Bush administration seek to identify the level of U.S. military involvement in SSCs that it expects—with assumptions about the numbers, types, and concurrency of operations—as part of the force-sizing process in order to capture the particular demands of such operations on the force over time. Our analysis suggests that this will be true even with a more selective engagement policy. Even with the most limited level of commitment to SSCs, a number of high-demand assets experienced substantial tempo strains.

Once a notional level of commitment is defined, force planners should estimate the steady state forces required to sustain the major part of the operation. In some cases, these forces may be somewhat smaller than the forces initially required and significantly larger than the forces required in the final phases of the operation. This calculation will not be easy; no two SSCs will be alike, and timelines and force requirements will vary widely, even for SSCs with similar characteristics.[7]

Force structure requirements derived from this approach are measured in the same terms described for the MTW building block, but with additional considerations. First, the SSC building block should not take into account possible force substitutions (this issue is addressed in subsequent modeling and analysis). Second, there may be potentially larger force requirements (surging) at the start of some SSCs, such as opposed interventions and peace accord implementations. These force levels are not reflected in steady state forces; rather, the building block should be based on anticipated force size and types called for over the predominant portion of the SSC. Third, some SSCs, such as shows of force, may be precursors to MTWs, undertaken to deter aggression and to signal U.S. resolve. In such cases, no additional force structure should be considered beyond that already included in the MTW building block. Fourth, long-term rotational requirements and use of presence forces are not directly reflected in this stage of the methodology. (These requirements are addressed in Step 5.) The result of this step in the process should be a notional building block of forces designed to meet the anticipated SSC requirements of a given strategy.

Homeland Security

If a strategy gives high priority to DOD support for civilian agencies in a variety of homeland security missions, then force planners should examine the implications of this set of missions for the size and shape of U.S. conventional forces. Referring to Step 1 and Step 2 definitions and

priorities of the military missions included under the homeland security umbrella, one would begin by identifying which priority missions would have a potentially significant impact on conventional forces. This led the working group to focus on critical infrastructure protection (for example, computer network defense, information operations, and deployment infrastructure) and on consequence management in response to WMD terrorism on U.S. soil.

For each mission area, a set of planning factors should be developed that articulates assumptions about the number, type, and concurrency of such operations that the U.S. military should be prepared to undertake. For example, one might plan to be able to respond to one large or one small kinetic WMD event concurrent with one large and one small chemical, biological, and radiological WMD event, while also being able to provide simultaneous physical protection of up to 10 strategic deployment sites. Here, it will be important to view homeland security requirements not in isolation but in the context of other priority demands that may be placed on the U.S. military at the same time. Given that the most likely time for a WMD terrorism attack on U.S. soil may be during or just before a major war abroad, the Bush administration will need to consider a new standard: meeting homeland security requirements while fighting one or more major wars. This is true not only for domestic consequence management, but also for the full range of potential DOD homeland security missions. Otherwise, the President might be forced to choose between securing vital American interests at home and securing them abroad.

Based on these planning factors, the homeland security building block should include those forces required to meet homeland security missions over and above those required to meet the strategy's warfighting requirements. Such forces will be primarily small, specialized, and currently scarce units that would provide unique command, control, logistic, and organizational capabilities in support of local, state, and Federal agencies.

Transformation

Finally, if transformation is treated as a force-sizing element, then planners must determine whether to develop a building block of standalone forces that would be set aside for activities such as concept development, experimentation, and reconfiguration, and essentially unavailable for other missions, or instead to treat transformation requirements as simply another set of peacetime demands on the force that should be met on a rotational basis.

Step 4: Addressing Overlap

With initial force-structure building blocks established, the next two steps tailor the aggregate force based on several practical considerations usually defined in policy or by planning assumptions. These include assumptions about extracting forces from one operation to participate in another, requiring some forces to stay behind in unengaged (that is, non-MTW) theaters even in the midst of one or more MTWs and other policy and planning assumptions that could affect force availability, such as swinging or dual-apportioning forces between major military operations, the timing and sequencing of force movements, and use of the Reserve components.

Accounting for Planned Force Extractions

Current policy assumes a 100 percent disengagement of U.S. forces from SSCs in the event of two MTWs. But this policy may be neither attainable nor strategically sound in practice. There may be real constraints on the ability of the Armed Forces to withdraw from SSCs in a timely manner and to redeploy to an MTW. Equally vital U.S. interests may be at stake in the SSC; a U.S. withdrawal might cause the collapse of an entire coalition operation; allies or Reserve forces might not be willing or able to fill in for departing U.S. forces; or the additional strategic lift required might not be available in a timely manner. Therefore, the working group applied a more conservative assumption that 50 percent of the forces involved in SSCs would disengage and redeploy to a major war.[8] This means that only half of the force requirements for a given strategy's level of commitment to SSCs is considered in force sizing. The other half is assumed available for other higher priority activities. The value of this approach is that it clearly articulates SSC force requirements as a discrete category, separate from MTWs, and acknowledges that, in practice, some forces may not be easily extracted, reconstituted, and redeployed in accordance with CINC timelines. How this overlap is defined—by a percentage of the force or by types of units or personnel—can be modified, but the conceptual underpinning remains constant.

Counting Presence Forces

The role of overseas-presence forces in MTWs and SSCs is also considered at this stage of the process, and the overall force structure adjusted accordingly. For example, forward-deployed naval, air, and ground forces may be part of the initial response to a crisis; indeed, this is an express part of their purpose. Therefore, care must be taken not to double-count such

forces in both the presence and MTW or SSC building blocks. On the other hand, some forward-deployed forces may be so vital to deterrence and stability in a given region that they would not be withdrawn from an unengaged theater even in the event of MTW execution. For the purposes of the working group's analysis, assumptions about which forces should be treated as stay-behind forces were derived from judgments about what would be required to meet U.S. treaty commitments, maintain deterrence and regional stability in a given theater, and provide the regional CINC with minimum essential levels of force protection, support to noncombatant evacuation operations, and strike capability.

Swinging, Dual Apportionment, and Use of the Reserve component

Additional adjustments to the aggregate force structure must be considered in light of various policy assumptions. The first such assumption deals with forces that would swing between operations, that is, be used in one campaign and then quickly redeployed to another. Forces that are considered as candidates to swing between operations are generally self-deploying or require relatively little strategic lift, such as long-range bombers and certain naval assets. The second assumption deals with forces that are dual-apportioned, that is, forces that could be allocated to one or another theater in wartime. These are usually scarce or unique assets that more than one CINC would desire in wartime, such as the 82^{d} Airborne Division or unique chemical-biological defense assets, whose deployment would hinge on a decision of the National Command Authorities as a crisis unfolded. Finally, there are assumptions to be made about the Reserve forces that would be called up in the event of one or more MTWs and about mobilization timelines. The greater and more timely the mobilization of the Reserve components assumed, the less the demand for active-duty forces, and vice versa.

All of these considerations should be taken into account to determine where force building blocks should be counted in a purely additive manner and where overlap should be discounted to avoid double-counting forces that are appropriately assigned more than one mission or function.

Step 5: Assessing Rotational Base Requirements

Step 5 in our force-sizing methodology accounts for the rotational base requirements associated with overseas commitments of long duration, that is, both overseas presence and participation in long-term SSCs. In this step, force planners examine those operations or activities that would necessitate rotations of forces in order to keep time away

from home for given units or individuals within acceptable levels, as defined by their service.[9] This involves, first, identifying the presence, engagement, and SSC commitments that would require rotations to sustain. These might include, for example, maintaining a nearly continuous naval presence in a given region, keeping a brigade-equivalent of ground forces deployed to an SSC over several years, or sustaining a no-fly zone or sanctions-enforcement regime on an indefinite basis. The forces required to meet these long-term commitments are then multiplied by a service's rotational factor, generally between 4 and 5, but sometimes higher. The resultant force structure is then compared to the aggregate force structure derived from the various building blocks (adjusted for overlap), and the greater of the two becomes the force structure option for a given strategy.[10]

Step 6: Making Final Adjustments

Up to this point, the force-sizing effort has focused primarily on major conventional force elements such as Army divisions and Navy carrier battle groups. Step 6 is designed to ensure that adequate attention is paid to those forces necessary to generate and to sustain this capability, as well as meeting other unique requirements. In this step, any such forces that have not been included thus far must be identified and integrated into the overall force structure. Such generating forces might include training units (supporting force accession or training missions), higher-echelon maintenance and support units, and strategic mobility forces. Key sustainment forces might include strategic lift, tankers, logistics forces, and ISR capabilities.

Step 7: Modeling and Analysis

In Step 7, the overall force structure that results from the previous steps is tested through iterative wargaming, modeling, and analysis to determine whether it meets the requirements of the strategy at the levels of risk deemed acceptable. This is no small challenge for several reasons. First, a force must be assessed not only in terms of its performance of warfighting missions, but also in terms of its performance of the full range of priority missions identified in the strategy, its ability to sustain the prescribed level of peacetime operations (such as presence, engagement, and SSCs), its flexibility to deal with both anticipated and unanticipated future threats, and its affordability.[11] However, few if any currently available force performance models accurately reflect how the U.S. military actually operates, nor are there adequate models that capture the full range of peacetime demands

and facilitate evaluation of force sustainability over time. Most existing models have critical deficiencies, and the lack of better models makes it difficult to assess and to compare alternatives. This state of affairs will present a difficult challenge for decisionmakers in the 2001 QDR, requiring them to make critical judgments and decisions with inadequate analytic support.

Conclusion

The Bush administration will face several key decisions in sizing U.S. conventional forces to meet the requirements of its chosen strategy at acceptable levels of risk. The purpose of this chapter has been to outline a methodology that addresses each of these decisions and offers QDR planners a transparent and replicable way to translate strategy into force structure options. DOD currently lacks such a methodology. There is great promise in the proposed approach, and it is offered to the 2001 QDR as a way to proceed. Whatever the specific strategy developed in the QDR, the NDU Working Group believes that the administration should size the force in a manner that takes into account not only the strategy's warfighting requirements, but also its high-priority peacetime demands, whatever those demands may be. We also recommend taking a second look at the size and shape of the force through the lens of future capability requirements. Equally important, whatever the methodology used to arrive at the force structure that will support the selected strategy, it must explicitly account for risk and be able to withstand open, independent scrutiny.

This will be no small challenge given the current state of the available models and analytic tools. While some might be tempted to use the need for better analysis or more rigorous risk assessment to postpone some of the most difficult decisions, they cannot afford to do so in the 2001 QDR. Failure to confront the hard choices that must be made to close the strategy-resources gap would be a decision in and of itself, one with serious consequences for the U.S. military. Given the lack of adequate models, the QDR should focus primarily on developing a defense strategy, setting clear priorities for DOD, and making the most important program decisions. A follow-on effort should conduct more in-depth analysis to flesh out and refine all of the programmatic implications. Risk assessment during the QDR itself should aim for rough order-of-magnitude judgments of risk to inform the most significant decisions; more detailed risk assessment could be part of the follow-on analytic effort.

Consistent with this approach would be a more varied and iterative set of tests (reflecting a given strategy's priorities) to assess and to refine force structure options. Such an approach might begin with a series of seminar wargames that would play a given set of force-structure options across a broad range of high-end operations—including a wider range of potential threat scenarios, end-state objectives, operational constraints, and concepts of operations—consistent with the chosen strategy. The same options might be played in a concurrent series of wargames aimed at assessing force sustainability over time. Those options that look most promising in wargames might then be subjected to more in-depth modeling and analysis to further assess force performance. In the 2001 QDR, this will require cobbling together a suite of existing joint and service models to examine various aspects of force performance in major contingencies.[12] Promising options could also be assessed in terms of force preparation risk and affordability risk. Based on initial results and on the tradespace candidates consistent with the given strategy, the force structure options could be refined and reassessed. The result of such a process would be a more rigorously tested force structure optimized across a more representative range of strategy-driven challenges.

This will inevitably be a highly imperfect process in the next QDR, given the state of the tools available. Nevertheless, a more comprehensive and iterative approach to force structure assessment is far better than one that relies primarily on a limited set of modeling runs that do not fully capture how the U.S. military operates.

In the longer term, DOD needs to give much higher priority to investment in new modeling, analysis, and decision-support tools as well as to the creation of a common conceptual framework for the assessment of risk. In the near term, however, DOD should strive to create a rigorous and transparent process for force sizing that ensures that key judgments and decisions are made explicitly and in a manner that reflects the strategy's guidance on where to place emphasis and where to accept or manage a degree of risk.

Notes

[1] The working group's approach to force structure modeling and analysis is found in chapter 8.

[2] For more discussion of assessing risk, see chapter 7.

[3] An in-depth discussion of levels of risk appears chapter 7.

[4] These issues are explored in more detail in the discussion of force structure and capability issues in chapter 8.

[5] See chapter 2 on the future security environment.

[6] See chapter 9 on overseas presence.

[7] The working group considered vignettes and force lists under development for the *Dynamic Commitment* wargames conducted by the Joint Staff, as well as in the *Defense Planning Guidance*, to determine the range and scope of potential SSCs.

[8] Other percentages might be considered, and subsequent analysis should examine other alternatives in this area. For example, the working group assumed only a 25 percent withdrawal of SSCs in Strategy D at low risk.

[9] See table 10–2 on page 270 in chapter 10 for a listing of peacetime operations.

[10] Rotational requirements are discussed in more detail in chapter 9 for overseas presence and in chapter 10 for peacetime operations.

[11] Each of these areas is discussed in more detail in chapter 7 on risk assessment.

[12] The so-called JWARS suite of models being developed for DOD was intended for use in the 2001 QDR, but will not be ready in time as development and validation have proceeded more slowly than anticipated.

Chapter Seven

Assessing Risk: Enabling Sound Defense Decisions

by Kenneth F. McKenzie, Jr.

Risk assessment will be a fundamental part of the 2001 QDR. According to the National Defense Authorization Act, "The assessment . . . shall be undertaken by the Secretary of Defense in consultation with the Chairman of the Joint Chiefs of Staff. That assessment shall define the nature and magnitude of the political, strategic, and military risks associated with executing the missions called for under the national defense strategy. The results of the review [shall be submitted to Congress] including a comprehensive discussion of the national defense strategy of the U.S. and the force structure best suited to implement that strategy at a low to moderate level of risk."[1] The objective of this chapter is to establish a methodology for talking about, measuring, comparing, and deciding on defense issues from a perspective of risk assessment.

This chapter proposes a general theory of risk assessment with two goals: establishing the conceptual basis for a detailed risk assessment analysis and suggesting principles to inform work on risk assessment in the 2001 QDR. To accomplish these goals, a set of definitions is outlined, beginning with national security risk and then addressing strategic military risk and operational risk. A methodology is outlined for evaluating force structure alternatives by assessing different levels of risk that combine force performance (how a force structure fights and deters) and force sustainability (how a force structure maintains readiness over time).

Other measures for risk assessment are defined that include affordability (Can we afford to buy the force?) and preparation for the future, which has two components: transformation, which involves preparing for the most likely future, and hedging, which means preparing for less likely futures. The methodology combines quantitative measures with qualitative judgments. A toolkit for force planners (see page 211) integrates all of the elements into a consistent, replicable process for risk assessment. The

toolkit is designed to have broad applicability for use with a host of current and potential modeling and analysis approaches.

Concepts of Risk

For a subject so important to defense planning as risk, it is surprising that there is no current DOD-wide definition as it relates to force planning. In the definitional manual of the Joint Staff, the only mention of risk is as a technical definition associated with the employment of nuclear weapons. Neither current national security nor national military strategy discusses risk. Also, the 1997 QDR report and the associated National Defense Panel report are both silent on this issue. Most recently, the annual DOD report to Congress for 2000 did not address risk. Senior military leaders have not been silent on this issue, however. In recent congressional testimony, the Chairman voiced concern about the ability of the Armed Forces to execute assigned missions under conditions of acceptable risk.[2] Some of the best recent treatments of risk assessment have come from the private sector, but this literature tends to focus on business and portfolio management risk, as well as complex system risk.[3] The idea of risk in relation to strategy and force structure is an idea more talked about than formally embedded as an element of U.S. defense planning.[4] The measurement of risk is becoming increasingly important in force planning and strategy development, but it has proven resistant to quantification.

National Security Risk Assessment

National military strategy (NMS) is a distillation of broader national security strategy (NSS). The latter operates the classic levers of military, economic, and diplomatic power to support and to advance U.S. global interests. It embodies the highest statement of national security objectives. National security risk therefore is the overall probability that the application of the national elements of power will be unable to achieve national security objectives. The 1999 NSS established three primary objectives: enhancing American security; bolstering economic prosperity; and promoting democracy and human rights abroad. This is the grand arena of foreign policy, where the largest and most enduring national objectives of the United States are pursued.

NMS focuses more narrowly on the military lever of national power.[5] The most recent NMS, which was published in 1997, uses the "shape, respond, prepare" construct to describe how military forces are to be used

for national military objectives in support of NSS. The broadest national objectives of the United States provide the framework within which NMS operates. This is an important consideration because any military strategy draws its planning horizons from the role given to the military element of national power under the national security strategy. While reference has been made to the existing NSS and NMS, the concepts that are proposed in this chapter are designed to be useful for evaluating *any* strategy.

Defining Strategic Military and Operational Risk

The working group proposed a working definition of *strategic military risk* as the overall probability that a military force will be unable to achieve all of the objectives of a defense strategy. Strategic military risk involves prioritizing between, while simultaneously accomplishing, the objectives of a defense strategy. Strategic military risk involves the aggregate effects of operational activities and how they influence overarching security objectives, such as maintaining strong alliances, influencing (or coercing) potential adversaries, and supporting peace and stability. These objectives are operationalized as deterring and fighting major theater wars, conducting a broad range of smaller-scale contingencies, participating in a wide variety of presence and engagement activities abroad, and preparing the U.S. military forces for the future by transforming the force for expected future demands and by hedging against uncertainty.

Operational risk is the probability that a military force will be unable to achieve operational objectives within a defense strategy. Operational risk involves a given force structure's performance in two areas: first, meeting operational objectives in MTW scenarios, SSCs, and other operations short of theater-level war (and the deterrence that obtains from the demonstrated ability to execute these operations); and second, sustaining acceptable long-term readiness across an extended timeframe and a range of operations, including SSCs and presence and engagement operations.

The first question to ask about strategic and operational risk is whether failure is likely. The second question is equally important: What are the consequences of failure? While the failure of a military strategy might directly threaten the survival of the United States, operational failure might have lesser, if still significant, effects. Measuring risk is a function of assessing the two variables: the likelihood of occurrence and the magnitude of the undesired consequences. As the consequences of failure increase, the degree of risk that can be tolerated decreases.

The ability of a given force structure to support the mission areas of a given military strategy determines operational risk. Strategic military risk

depends not only on operational risk, but also on the relative priority of the different elements that comprise the strategy, as well as whether the elements are affordable. The working group's approach emphasizes the relationship between strategic military and operational risk, focusing its attempts to quantify strategic risk on assessments of force performance, sustainability, preparation for the future, and affordability. (Other factors—such as diplomatic and economic—also influence the calculation of national security risk, but they are beyond the scope of this work.)

This chapter addresses a force planner's and a strategist's definition of risk assessment; however, it does not directly address tactical risk in the sense of ongoing military operations (that is, whether we will be outgunned, out-flown, out-ranged, out-leveraged, etc.). Initiatives at the service level address issues of tactical risk associated with training and combat operations. The working group's definition also diverges slightly from the Congressional mandate to consider "political, strategic, and military" elements of risk. This study's definition subsumes some of the political considerations, while others are beyond the scope of this analysis, and even beyond the scope of the QDR, because they depend on factors outside of DOD, such as interagency issues.

Defining Levels of Risk

Four levels of risk are specified in this study. In general, low risk is a judgment that failure is unlikely, and objectives will be realized within acceptable levels of expenditure of resources and time.[6] Moderate risk is a judgment that failure is still unlikely, but success may require the expenditure of somewhat higher than desirable levels of resources. The timeframe to achieve success may also be extended. High risk is a judgment that failure is possible (although still unlikely), and the expenditure of high levels of resources across an extended timeframe is likely. Unacceptable risk is a judgment that failure is likely, and the expenditure of very high levels of resources across an extended timeframe is probable, with no assurance of a favorable outcome.

The definitional structure deliberately omits a category for very low, zero, or negligible risk. While pursuing a strategy and an associated force structure that operate without risk may be desirable, the cost of moving from low risk to no risk may require an exponential increase in resources. There is a trend in defense thinking to enshrine very low- or no-risk options as among the most desirable characteristics in any concept, program, or plan, but this is unrealistic. Time and energies are better spent managing risk.

The Consequences of Failure

Understanding what consequences are associated with the failure of a strategy and a force structure is important. National security strategy failure could threaten both the immediate and the long-term survival of the nation. An example of this type of failure would be the collapse of a critical collective security alliance, such as NATO.

Strategic military failure directly affects the vital national security interests of the United States and could threaten the physical, political, or economic survival of the nation.[7] Strategic military failure could lead to national security strategy failure. It could result in loss of political or military leadership; weakened alliances and coalition-building capability; loss of deterrent capability and military credibility; loss of domestic political support; or renewed opportunity for others to challenge U.S. interests.

Failure at the operational level involves the loss of national resources, such as ships, planes, vehicles, or, most importantly, personnel. Failure at this level might also include the loss of terrain, noncombatant casualties, and other adverse operational outcomes that have an ultimately negative effect on the national military strategy.

Assessing Strategic Military Risk

Strategic military risk involves issues of national survival, stability of regions and key allies, and critical global interests, commitments, and influence. The relative priority among the four primary elements characterizes a given strategy: MTWs (and how many are planned for); SSCs; presence and engagement activities; and preparing for the future (including both transformational activities taken to prepare a force for the most likely future, and hedging activities undertaken to prepare for a less likely future).[8] These four elements are the actual activities that all military strategies must undertake—below the level of "shape, respond, prepare." The relative emphasis that alternative military strategies place upon each of these activities becomes the measure of their differences.[9]

Differences become apparent as strategies establish priorities among the different elements that define them. A judgment of risk is derived from the relative ordering of the elements (for example, a strategy that assigns a lower priority to MTWs is tacitly accepting some measure of risk in that element) as well as how well the associated force structure supports the different elements. The aggregation of these elements yields a judgment of strategic risk. For the purposes of this study, factors that operate at the

national security strategy level (for example, diplomatic and economic elements of power) are recognized, but not explicitly analyzed.

Strategic military risk is a complex cumulative judgment based on the priorities assigned to elements within a given strategy as well as the operational risk that is determined by the military strategy's associated force structure. Aggregated operational risk (explained below) affects strategic military risk, as do the long-term issues; for example, how well does it prepare for the unexpected? For this reason, a qualitative analysis of how any military strategy prepares for the future—that is, how it transforms and hedges—must also be part of any strategic military risk assessment.

Last, is a given military strategy affordable? Can the nation afford to expend the treasure a military strategy requires and to sustain the strategy over time? While this is inherently quantitative, it also requires assessments of political will (How much should be spent on defense?) that make it ultimately a qualitative analysis as well.

Assessing Operational Risk

The credibility of a force structure rests upon its perceived ability to execute the tasks called for by its associated military strategy. These are both immediate (the ability to perform satisfactorily in contingency taskings, also known as *force performance*) and long-term (the ability to retain effectiveness over many operations and a long period of time, also known as *force sustainability*). To be credible, a force structure must be effective in both areas. Force credibility is the core military contribution to both deterring and executing the full spectrum of military operations.

The methodology suggested in this section uses both a quantitative and a qualitative approach, but the numbers assigned here are less important than the overall process. The numbers are open to discussion, and there may well be better values to plug in than those that have been selected here. The method is meant to suggest ways to assess operational risk more rigorously.

Measuring Force Performance Risk

Force performance risk is the probability of a given force structure's failure to meet established objectives when executed against a given scenario. The potential scenarios range from the most stressing that military forces will face, from major theater warfighting to SSCs and lesser contingencies. The analysis considers risk for execution of both a first and a second MTW (or however many the strategy dictates), and other lesser requirements. The analysis is built around the most difficult tasks

military forces could be called upon to execute: MTWs.[10] There are, however, a myriad of other demanding contingency operations that might prove at least as challenging for all or part of a force structure.

Four operational objectives were adopted as the primary means of measuring force performance in the most demanding scenarios.[11] Taken together, they attempt to capture what happened within the battlespace: what key terrain was lost, gained, or changed hands; what damage was inflicted upon the enemy; how long key activities took to accomplish; and what friendly losses were incurred.

These metrics are no more than tools for analysis; they can assist but not supplant sound military analysis in making the final judgment of the level of risk for a given MTW. However, some quantification is desirable, so long as the results of modeling and assessment are subjected to the common sense test.

Battlespace

Physical occupation of ground will remain the ultimate determinant of an aggressor's success in any scenario involving invasion or occupation. Concurrently, airbases, ports, and maritime chokepoints govern the use of air and sea forces. The ability to exploit space influences all other capabilities. Key terrain is uniquely tied to geographic localities and specific scenarios, but some generalization is possible. Aerial ports of debarkation (APODs), surface ports of debarkation (SPODs), and sea lines of communication (SLOCs) necessary for force deployment are key terrain. Some—not all—airbases are also key terrain (such as those airbases critical to force flow and friendly air operations). Political centers—almost always cities—are key terrain, with the national capital usually being primary. Physical features, such as mountain passes, rivers, and other lines of communication, may be crucial. Key terrain may refer to terrain that is initially either friendly or enemy. Three potential snapshot days were used to measure retention or control of terrain within the battlespace: the halt day, the counteroffensive day (COFFD), and the campaign completion day (CCD).

Designating key terrain is not a rigid, mechanical process. In evaluating force performance, the noncontiguous nature of the modern battlefield must be considered. In U.S. doctrine, for example, the retention of terrain is meaningless unless it serves some operational purpose. Thus the process must be qualitative as well as quantitative and must encompass some measure of the operational art.

At low risk, at the end of the operations, the enemy does not control any key terrain. For moderate risk, the enemy may control some key terrain, but no airfields, APODs, SPODs, or political centers. At high risk, the enemy may control some key terrain, including tertiary political centers, and at least one APOD, SPOD, or airbase, and may threaten a SLOC to the degree that significant maritime assets must be dedicated to maintaining its security, and seaborne force flow is reduced by 25 percent or less. Unacceptable risk is where the enemy controls key terrain including multiple political centers, and more than one APOD, SPOD, or airbase, and closes SLOCs through mining or other sea-denial operations to the extent that seaborne force flow is reduced by 26 percent or greater.

Effect on an Enemy

A measure of the warfighting capabilities of the enemy is critical to assess force performance. Enemy strength and effectiveness will directly influence the types and quantities of friendly forces required. Degradation of enemy capability is a fundamental criterion for transition between phases of campaign plans. Five metrics have been selected for this evaluation.

- Ground forces: the mobile offensive ground forces of an opponent.
- Air forces: the fighters and attack and bomber aircraft that are capable of undertaking their primary missions.
- Air defense: both integrated area air defense systems and nonintegrated point air defense.
- Enemy naval forces: surface, subsurface, and purely naval aviation assets.
- WMD: encompassing offensive systems that could be employed either against forces in the field or against countervalue targets.

Low risk means that enemy ground forces have been reduced by approximately 50 percent and have lost the ability to maneuver above battalion level; air forces are not capable of coordinated operations; air defense is negligible, except for sporadic point defense; enemy naval forces are unable to conduct operations, and possess a limited and uncoordinated capability to conduct sporadic antiaccess operations; the enemy possesses a very limited WMD capability, able to deliver only infrequent, inaccurate, and uncoordinated attacks.

Moderate risk means that enemy ground forces have been reduced by approximately 30 percent and have lost the ability to maneuver above brigade level. As above, air forces are not capable of coordinated operations, and air defense is negligible, except for sporadic point defense. Enemy naval forces are unable to conduct coordinated offensive operations but, unlike the low risk assessment, can conduct some limited antiaccess operations.

The enemy possesses a limited WMD capability, with the capability to deliver only inaccurate but more frequent attacks.

High risk means that enemy ground forces have been reduced by less than 30 percent and retain the ability to maneuver offensively at division level. Air forces are capable of limited operations. Air defense is limited to point defense. Enemy naval forces retain the capability to challenge with limited sea denial operations and can conduct coordinated antiaccess operations that materially reduce seaborne movement of forces into the theater. The enemy possesses a limited WMD capability, with the capability to deliver sustained, if still inaccurate, attacks.

Unacceptable risk means that enemy ground forces have been reduced by less than 20 percent and retain the ability to maneuver offensively above division level. Air forces are capable of limited operations and may be capable of locally challenging friendly air superiority. Air defense is limited to point defense. Enemy naval forces possess the capability to challenge U.S. and allied sea superiority at a time and place of their choosing and can conduct coordinated antiaccess operations that threaten to halt the flow of seaborne reinforcements (this is linked to SLOC control in the key terrain metric). The enemy possesses a WMD capability, able to deliver sustained attacks that are coordinated with ground or air operations.

In evaluating the metrics of enemy degradation, if a single condition obtains from a higher level of risk, then the higher level of risk is the condition that is reported. For example, if all conditions are met for an evaluation of moderate risk but the enemy retains the capability to conduct sustained WMD attacks, then the overall enemy risk degradation would be assessed as high instead of moderate.

Time

The length of the campaign, or the portion of the campaign within which force performance is measured, is established based on the achievement of theater operational objectives. Three measures can be used, depending on the insights that are being sought. The first is halt day, which is the time when an enemy advance is stopped. The second is COFFD, which is the day that the CINC plans to begin his or her counteroffensive, based on closure of the joint force and establishment of operational preconditions. The third is CCD, which is the planning date for the completion of operations.[12] These days are generally expressed in the language of force performance risk already outlined: possession of key geographic objectives, enemy degradation, and friendly status.[13] Also,

these dates have dual significance. First, they are temporal anchors, the specific points in time at which the other measures of force performance are assessed. Second, the dates reflect the cost in time for the execution of a scenario. The period between the planning dates for either COFFD or CCD and the actual dates is the measure of risk. The ability to halt the initial enemy offensive enables all other subsequent operations. The actual dates of these three measures are triggered by the accomplishment of required objectives.

Low risk means that halt day, COFFD, or CCD has been met either by the designated day or by a delay of not more than 20 percent of total time elapsed; *moderate risk* means a delay of 21–50 percent; and *high risk* means a delay of 51–100 percent. *Unacceptable risk* means delay of more than 100 percent, or that the halt day, COFFD, or CCD cannot be triggered because of an inability to meet the required operational objectives.[14]

U.S. Air, Ground, and Sea Losses

This metric captures the loss rates of U.S. forces over the timeframe of a given scenario.[15] Air losses are measured as a percentage of all aircraft operating in theater. Ground losses are measured as a percentage of all armored fighting vehicles and artillery in theater. Sea losses are measured as a percentage of all warships and support craft operating in theater.[16]

For air, sea, and ground forces, a total loss of 2 percent or less in each category is considered to be low risk; 3–6 percent, moderate risk; and losses of 7–10 percent, high risk. Losses greater than 10 percent are considered unacceptable.[17] For the purposes of this study, damaged vessels that must be withdrawn from operations are considered losses.

Linking risk assessment to friendly losses is a potentially emotional issue. In this study, these numbers are used as a force planner's assessment tool, not an operational planner's decision support criteria. This is a critical distinction because the dynamic chaos of an actual warfighting environment could reasonably justify an operational planner's acceptance of losses in excess of those stated above. On the other hand, to a force structure planner, a potential force that performs relatively poorly in this area may require greater scrutiny and analysis.

In addition to the primary force performance metrics, four supporting measures were examined: a measurement of the day that aerospace superiority was attained in the theater, the day that maritime superiority was attained, the day that enemy air defenses were effectively suppressed, and the total allied air, ground, and sea losses. Other measures may be worth further study, such as the measurement of personnel losses, either

in addition to or instead of equipment losses; the measurement of collateral civilian losses; effects of attack on enemy strategic infrastructure; a rolling comparison of relative combat power; and a qualitatively-based measurement of the attainment of political objectives in SSC operations.

The four primary metrics are applied with equal weight in this analysis. Changing the relative weighting might result in significantly different insights and assessments. There are also potential linkages between different metrics worthy of further exploration. The most obvious example of linkage is that between losses and time. A shorter campaign might not be as sensitive to U.S. losses as one that is longer. Applying different weights to metrics is an area ripe for further exploration.

Some cautions must be kept in mind when applying this methodology. First, this approach measures battlefield outcomes; it cannot measure, except indirectly, the effects of these outcomes on the political will of the enemy. Since influencing the will of the enemy is a primary objective of any military engagement, this is a notable deficiency. This can be compensated to some extent by parametric adjustments, such as assuming that an opponent will halt or withdraw after sustaining a given set of operational reverses.[18] Unfortunately, this is a relatively clumsy input, rather than an output.[19]

It is easy—and wrong—to overstate the relationship between force performance risk and national will. The risk assessment that is derived from how a given force structure performs against a given scenario will not change, even if the level of U.S. national interest does. Losses that are acceptable in some circumstances may prove unacceptable in others, but this is not a reflection on the performance of the force. Instead, it mirrors different levels of national interest. Risks and losses that were acceptable in Normandy in 1944 were not acceptable in Mogadishu in 1993. This methodology uses a reasonable person scale that attempts to capture what is acceptable and unacceptable. This scale may change as a function of national will, but it is a matter that is external to the questions of force performance that are evaluated here.

Examining Different Conditions for Force Performance Risk

The methodology for determining force performance risk is based on describing the overall attributes of a given force structure in the execution of a given scenario. To be useful, however, the methodology must go beyond a single assessment of a base case force structure and a base

case scenario. To capture fully the robustness of the force, a variety of variables are considered. The same force structure is examined against scenario excursions that introduce different assumptions about such factors as warning time, postures of engagement, separation time, enemy WMD employment, and enemy force performance. For ease of measurement, these excursions from the base scenario are executed in increasing order of difficulty against each force structure. Other potential variables could also be employed to enrich and to fine-tune the assessment of force performance risk.

In aggregating the results of force performance evaluations, the highest single level of risk within a given outcome dictates the overall risk score assigned to a given force structure.[20] This is a conservative methodology, based on the belief that the force planner must always be prudent in examining force structure alternatives because the future can be seen only dimly. Things are different for the operational planner, who can, and often must, accept less conservative approaches to risk assessment.

This methodology for assessing force performance risk, anchored in high-end warfighting, can yield useful insights into operations of lesser intensity, such as coercive campaigns and other high-end operations. However, domestic disaster relief and other less stressing humanitarian operations, as well as many special operations, are less susceptible to this form of analysis.

In MTWs, there is a silent assumption that we are fighting for vital national security interests. In an SSC or other type of operation, this probably is not the case; thus the tolerance for U.S. losses may well be much lower. There may also be a time constraint. Changing the values associated with different levels of risk is a starting point.

Force Sustainability Risk

Force sustainability risk is the probability that a given force structure will be unable to meet established readiness objectives and availability requirements when executed against a given future scenario.[21] The force structures evaluated are the same structures that are being examined for force performance risk. The notional future security environments include a range of SSC, presence, and engagement requirements of varying degrees across a specified period of time. In this study, the period is 6 years. Different futures are executed, based on a range of scenarios with variable intensity, frequency, and concurrency, and linked to the assumptions of different NMS. Readiness objectives are measured in three areas: operations tempo (OPTEMPO) for service force elements, demand for

and employment of jointly-managed LD/HD elements of the force, and PERSTEMPO, measured within each service.

The objective of a force sustainability analysis is to identify force elements that will have significant tempo problems, as well as those that are underutilized. Taken together with force performance, this approach yields an overall picture of how effectively a given force structure adapts across a broad spectrum of challenges. A fundamental assumption of this approach is that excessive OPTEMPO causes units and personnel to function at lower levels of readiness, manifested in terms of additional wear and tear on equipment, cost, and violation of service force management policies.[22] This can lead to morale and retention problems and an inability to perform higher-priority missions. Unavailability of certain units, because of excessive demand or simple shortages, is also critical information.

We assign a score of low risk in force sustainability for major force elements when requirements are met with less than 3 percent of the force experiencing broken OPTEMPO (meaning in excess of service rules), there are no nonavailability issues, and no substitution is required (replacement of a required force element with another of functionally similar capabilities but dissimilar basic type, either interservice or intraservice). Low risk in force sustainability for LD/HD assets occurs when requirements are met with less than 10 percent experiencing broken OPTEMPO, there are no nonavailability issues, and no substitution is required. Low risk in force sustainability for individual servicemembers occurs when requirements are met with less than 3 percent of the force experiencing PERSTEMPO in excess of service rules.

We assign a score of moderate risk in force sustainability for major force elements when requirements are met with 4–6 percent of the force experiencing broken OPTEMPO; nonavailability is less than 5 percent and is met through substitution; LD/HD asset requirements are met with 11–15 percent of the force experiencing broken OPTEMPO; and nonavailability is 6–10 percent and is met through substitution. Moderate risk in force sustainability for individual servicemembers occurs when requirements are met with 4–6 percent of the force experiencing PERSTEMPO in excess of service rules.

High risk in force sustainability for major force elements occurs when requirements are met with 7–12 percent of the force experiencing broken OPTEMPO; nonavailability is 6–10 percent and is met through substitution; LD/HD asset requirements are met with 16–25 percent of the force experiencing broken OPTEMPO, nonavailability is 10–15

percent, and requirements cannot always be met through substitution (that is, shortages occur). High risk in force sustainability for individual servicemembers occurs when requirements are met with 7–12 percent of the force experiencing PERSTEMPO in excess of service rules.

Unacceptable risk in force sustainability for major force elements occurs when requirements are met with 13 percent or more of the force experiencing broken OPTEMPO, nonavailability is 11 percent or greater and is not always met through substitution. Unacceptable risk in force sustainability for LD/HD assets occurs when requirements are met with 26 percent or more of the force experiencing broken OPTEMPO; nonavailability is 16 percent or greater; and requirements cannot always be met through substitution. High risk in force sustainability for individual servicemembers occurs when requirements are met with more than 13 percent of the force experiencing PERSTEMPO in excess of service rules.

Force sustainability risk assessment looks at the robustness of force structures over an extended period of time. As with the force performance evaluation, if an element performs at a higher level of risk, then the entire structure is assessed at that higher level. However, not all shortfalls or OPTEMPO failures are equal. In assessing results, sound military judgment must remain the final test.

Operational Risk: Aggregating Force Performance and Force Sustainability Risk

The operational risk associated with a given force structure is a combination of its ability to perform in contingency operations (MTWs and higher-end SSCs) and in the extended day-to-day deployments that characterize the vast majority of current military requirements, namely, the lower-end SSCs and presence and engagement elements of a strategy. There is a tension between the definition of the principal utility of military force structure on one hand, "Henceforth the adequacy of any military establishment will be tested by its ability to preserve the peace," as articulated by Henry Kissinger, and the assertion on the other that "the purpose of the military is to fight and win the Nation's wars," as claimed by Colin Powell. Since force performance risk assessment is not subsumed under force sustainability, it is necessary to assess each separately.

After a given force structure is evaluated by the force performance and force sustainability methodologies, two measurements of risk are the result. These evaluations receive equal weighting under the rubric of operational risk.[23] The higher of the two risk evaluations becomes the overall operational risk assessment. For example, a force that performs at a moderate

level of risk in force sustainability analysis might have an unacceptable level of risk in force performance analysis; the force would receive an overall assessment of unacceptable.

This is a simple and straightforward merger that yields a clear audit trail. The utility of a methodology that is transparent, linear, and replicable is obvious. Values can be changed to fit differing assumptions and biases; the approach is broad enough to accommodate alternative approaches.

At this level of aggregation the methodology used for determining force performance is immaterial; either a quantitative or a qualitative approach will yield the necessary input. Some combination of the two is probably the best approach. The working group used contractor modeling as an input and its own judgment as the basis for evaluating force performance. Force sustainability was modeled by a simple spreadsheet approach, which informed the final analysis. Regardless of the approach selected, modeling and analysis must inform and not dictate final judgments of risk. Key assumptions must be explicitly stated and all findings qualified by reference to them. The final result of this process is an assessment of operational risk.

The Future and Money

The focus in time to this point has been through 2010. To develop a fuller picture of the risks associated with a given military strategy, it is necessary to look also at the longer-term future (transformation and hedging), and the fiscal reality (affordability, both internal and external to the defense program).

Transformation and Hedging

Near-term strategies and force structures have a cumulative effect on the long-term future. Incremental planning, by its nature, tends to accept that the future will be a continuation of the past and that trends are basically linear. Thus an overarching long-term plan is needed for longer-term objectives, and near-term plans need to be developed with the long-range objectives in mind. Both the long-term and near-term plans should routinely be evaluated in light of actual and potential changes in the future security environment. In essence, a peacetime military portfolio plays a role in deterrence, shaping, and influence; however, the overriding factor is to provide insurance against catastrophic and potentially unanticipated loss by being able to fight and win the Nation's wars. Insurance is intended to prepare against events that are possible—perhaps even

likely—and this requires transformation of the force over time. At the same time, prudence dictates that we also prepare for less likely but perhaps more dangerous futures—and this is hedging.

There will always be a level of risk about the longer-term future, which in this case is the probability that a strategy and an associated force structure will be unable to achieve future strategic objectives. An example would be the inability of the United States to defend an ally in the face of enemy use of antiaccess strategies. A balanced and flexible strategy and associated force structure is one that can deal with both anticipated and unexpected developments.

To prepare against all possible future threats is prohibitive in terms of resources and decisionmaking ability. The objective, therefore, is not so much to maintain an ability to do everything all of the time as it is to be able to adjust, modify, or augment current forces so as to do what is needed when necessary. Whatever strategy and force we create will be wrong to some degree; the goal is not to be so wrong that we are unable to recover and to adapt to unexpected future contingencies. There are a number of methods to evaluate what we might need to deal with future trends and discontinuities.

One practical method is to establish a checklist against which military strategy and force requirements can be evaluated. For example, transformation and hedging provide a framework for assessing strategies against a set of future risk criteria. Other checklist items could be added to expand the scope of the analysis.

The first area is that of transformation: whether a given military strategy and defense program will adequately prepare the U.S. military for the most likely long-term security environment. Low risk in this area would be a strategy and program that reflect a coherent long-term vision of the future, coupled with an action plan for the creation of force structure capabilities that will yield low-to-moderate risk outcomes in assessments of force performance in the 2025 timeframe. Moderate risk in this area would be a strategy and program that reflect a coherent long-term vision of the future, coupled with an actionable plan for the creation of force structure capabilities that yield moderate-to-high risk outcomes in assessments of force performance in the 2025 timeframe. High risk in this area would be a strategy and program that still reflect a coherent long-term vision of the future, coupled with an actionable plan for the creation of new and emerging force structure capabilities that, nevertheless, yield high to potentially unacceptable outcomes in assessments of force performance in the 2025 timeframe.

Unacceptable risk in this area would be a strategy and program that do not represent a coherent long-term vision of the future. Elements of the future vision might be present, but there is no linkage between the vision and the potential strategies and force structures.

The second area is that of hedging: whether a given military strategy and associated defense program have the flexibility to respond quickly enough to unexpected military or technological developments. This area has both a long-term and a short-term component. Unexpected political developments can occur in the immediate future, while threatening technological developments are normally associated with more distant timeframes. The critical element is the ability to respond effectively in the time period between strategic warning and the actual emergence of the threat. However long this period is, can we create an effective counter? Low risk means that there is both sufficient flexibility in U.S. force structure and a negligible external threat. There are no warning indicators. In this case, the event horizon is well beyond the response time. Moderate risk assumes that there are indicators of potentially threatening political or military developments in the long term, but initiatives are under way within the existing force structure to address the potential threat. This is the current state of affairs. High risk assumes that there are compelling indicators of potentially threatening political military developments in the near term, but it is not certain that initiatives under way to address the potential threat will be completely effective or ready before the threat matures. Unacceptable risk assumes that a potential threat looms, but there is no effective counter available within the timeframe of warning and threat maturation. These are qualitative judgments and, therefore, have a higher degree of subjectivity than many of the operational risk issues that have been previously discussed. Because of this, the most effective way to apply this evaluation may be to work with a range of outcomes (displaying the results of short- and mid-range analysis against a spread of potential futures), based on different views of the future security environment. The working group did not conduct this modeling and assessment, but this field is ripe for additional analysis.

Affordability

The final test of any military strategy and its force structure is that of affordability. Affordability risk is the probability that a given defense strategy and program will not be fully provided with necessary resources; the resulting mismatch could be more dangerous than a more modest strategy that is fully funded. Affordability is measured in two

areas: internal and external. Internal affordability refers to the departmental program. Are the basic elements of force structure, modernization, sustainability, and readiness provided with all required resources? The degree to which there is a resource shortfall for these elements—the departmental programs—reflects the degree of risk assumed. We assign a score of low risk to a program funded at or near the total cost of the force structure; moderate risk to one funded close to the total cost, but with certain shortfalls; and high risk to a program that underfunds significant program elements. We assign a score of unacceptable risk to a program that underfunds significant program elements and where the gap increases over time, resulting in pronounced and cumulative effects in combat readiness and preparedness for the future that cannot be readily remedied. In effect, judgments in this area evaluate the internal consistency of the DOD program. Does the budget match the plan? This is easier to measure historically rather than to predict because few programs at inception assume less than full funding. Because of this, this measure of risk may be of less utility in assessing future risk.

External affordability refers to the DOD program. Does the total program meet guidance on resource expenditure? This assessment requires the application of explicit assumptions. The risk here is the likelihood that the program, whether it is internally consistent, will survive external political scrutiny, based on the bottom line of total expenditure. In essence, how much is the Nation willing to spend on defense? In assessing this metric, it is important to understand what is being measured. It is not the soundness of the program, but its political viability. In other words, will the program survive?

Low risk is a defense program that falls within the anticipated topline. Moderate risk is a program that is slightly above the anticipated topline. High risk is a program that is significantly larger than the anticipated topline. A program that is more than 10 percent above the anticipated topline is unacceptable. These calculations and assessments reflect working group assumptions about the likelihood of future spending patterns. They could be adjusted or changed in other analyses to reflect different views of these issues. As in prior cases, the higher of the two risk assessments is the operative assessment.[24]

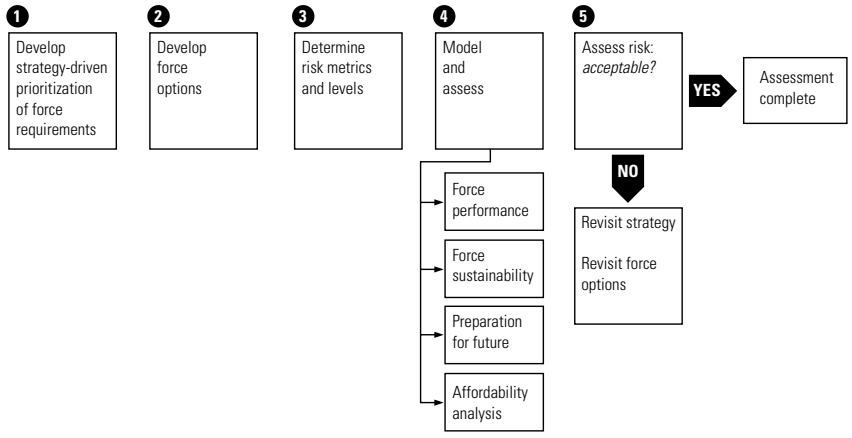
A Toolkit for Risk Assessment

Ultimately, the judgment about the level of risk for a given military strategy and associated force structure is a combination of both

quantitative and qualitative factors. The process that is suggested here is cumulative, but it must not become rigidly mechanical. The greatest analytical danger is that a risk assessment process that relies on the aggregation of risk may become, in Winston Churchill's famous aphorism, no more than "the sum of their fears," a result that may be neither useful nor insightful.

The approach to risk assessment that has been developed throughout this chapter is depicted in figure 7–1. Step 1 defines a military strategy by prioritizing the elements of the strategy. For the working group modeling effort, the primary elements are MTWs and deterrence, SSCs, presence and engagement, and preparing for the future. This process

Figure 7–1. A Roadmap for Risk Assessment



must be closely linked to the overarching national security strategy and its associated national military strategy. If the latter de-emphasizes engagement, for example, it would place a lower premium on the utility of the presence and engagement element. Prioritizing elements of the strategy begins the process of defining the bounds of acceptable risk. Since there will be both strategic emphasis and fiscal constraints, not all elements of the strategy will receive the same support.

Step 2 determines a range of force structure options to execute the strategy. A number of different approaches can be used to accomplish this. The easiest way may be to begin with the existing force and make successive adjustments that incrementally change the composition of the force structure. The resultant force structures should reflect a broad range of options.

Step 3 determines explicit risk metrics and levels of emphasis for all elements of the strategy, based upon the work done in Step 1, focused on the force structure.

Step 4 evaluates the force structure options developed in Step 2 to determine whether they meet the four major requirements of the strategy: force performance, force sustainability, preparing for the future, and affordability. Force performance and sustainability assessments are combined to yield the overall assessment for operational risk, which reflects the highest level of risk of the two.[25] This is the measure of force credibility, which is one of the most significant contributions of a given force structure to a military strategy. Operational risk directly influences the levels of risk not only for MTWs and higher-end SSCs (specifically as a function of force performance), but also for lower-end SSCs and presence and engagement (as a function of force sustainability). The next areas of assessment are those of preparing for the future (transformation and hedging) and affordability.[26]

Taken together, these measures yield a level of strategic military risk for a given strategy and a given force structure. The overall risk score is based on the highest level of risk of any category for any given force structure. In this methodology, all factors receive equal weight, but subsequent analysis may indicate that this is too blunt an instrument. Areas could be assigned different weights; the policy of assigning overall risk as a function of the highest level of risk in any category may also merit rethinking.

This is an iterative process, as scenarios and force structure excursions are examined and adjusted to meet different risk criteria. This may prove the most difficult part of the entire process. It will be relatively easy to design forces that meet risk criteria of a given strategy; it will prove far more difficult to design forces that meet acceptable strategy-driven risk criteria and affordability requirements.

Step 5 examines the results of Step 4. Force structures that meet all risk assessment criteria can be taken forward for further detailed analysis. Force structures that do not meet risk criteria are returned to Step 3 for adjustment and, where indicated, re-appraised. While modeling is an important part of this process, ultimate decisions about relative levels of risk must lean heavily on qualitative analysis.

The objective of the methodology is to arrive at Step 5 with a force structure that meets the requirements of the strategy, is affordable, and leaves a clear audit trail of analysis and decisions.[27]

How can unacceptable levels of risk be mitigated? There are two broad approaches to this issue. The first is the most common, and the most dangerous: redefine the problem or assume it away. When there is an apparently intractable mismatch of resources and ends, simply redefining success or the nature of the threat is a common approach. The danger is that the redefined threat may not accurately reflect the real world. Redefining strategic problems is a dangerous business and must be anchored in thorough analysis and realistic assessments.

The second approach is to increase resources. It is easier to develop conceptual solutions to strategic problems when increased resources can be presumed. The problem here, of course, is that key elements of this solution lie outside DOD. Current attempts by service chiefs to identify the need for an increase in the topline, and the resistance their efforts are meeting, are testimony to this. Ultimately, some balance of the two approaches is the most likely outcome.

Conclusion

This chapter has articulated a general theory of risk assessment for the 2001 QDR, designed to have utility for a broad variety of potential models and analytic approaches. It makes no attempt to prejudge or to compare the effectiveness of differing approaches. The general theory that has been advanced in these pages should be evaluated independently of the particular models that the working group used. The shortcomings of the models used have been identified; their deficiencies, however, should not reflect on this general theory of risk assessment. It has been said, "All models are wrong. Some are useful."[28] Modeling has been useful in illuminating some specific cases of this general theory, but the level of modeling available precluded comprehensive analysis.

Two recommendations flow from this chapter. First, the DOD needs a systematic approach to assessing risk. This begins with the creation of a common definitional and conceptual structure for the discussion of risk. This approach must be able to evaluate risk—strategic military and operational—in an internally consistent manner, without reference to the sliding scale of national will. All too often the discussion of risk in an operational context defaults to relative judgments based on perceptions of national security policy. While this linkage is important, it is more important for the force planner to be able to make consistent risk judgments based on known, replicable information. Quantitative analysis has

a role to play in this process, but it must never be subordinated to sound, seasoned military judgment.

Second, the DOD must pursue better models to support analysis of alternative force structures. All existing models have critical deficiencies, which limit any study that uses them; this study is no exception. The absence of good modeling means that new ideas and concepts cannot be validated or rigorously assessed. A second-order effect is to reinforce the tendency to evaluate operational outcomes at the national security strategy level (in terms of national will). This robs analysis of rigor.

The thread that will guide force planners through the next QDR is a common understanding of risk, based on robust analysis and transparent methodology. Understanding how to assess levels of risk is the tool that differentiates between strategies. It is easy to create strategies and force structures with unconstrained resources. It becomes far more difficult when inadequate means are the only tools at hand. Building strategies and force structures that are obviously unaffordable and then making incremental or salami-slice cuts is a fundamental abrogation of responsibility. A constant referral to ends, means, and potential tradeoffs is the best approach.

Notes

[1] S. 1059, National Defense Authorization Act for Fiscal Year 2000.

[2] See General Henry H. Shelton, *Posture Statement* before the 106th Congress House Appropriations Committee Defense Subcommittee, March 1, 2000, 13. See also Shelton's August 1999 reconfirmation speech, 9. Both texts assess the risk associated with the first of two MTWs as medium, and with the second of two MTWs as high. More recently, in congressional testimony of September 2000, the Chairman noted a strategy-resource gap within the current strategy, based on risk assessment.

[3] Peter L. Bernstein, *Against the Gods: The Remarkable Story of Risk* (New York: John Wiley and Sons, 1996), is an excellent overview of risk and risk assessment in a historical and financial context. Charles Perrow, *Normal Accidents: Living With High-Risk Technologies* (Princeton, NJ: Princeton University Press, 1984; 1999 reissue with new foreword), particularly 306–328, contains a good discussion of risk assessment.

[4] In August 2000 the Directorate for Strategic Plans and Policy (J–5), Joint Staff, did issue a comprehensive issue paper on risk as part of the Joint Strategic Review (JSR) process.

[5] The thrust of the working group's analysis thus focuses on NMS, recognizing that the development of the next NMS will be strongly informed by the strategy developed in the 2001 QDR.

[6] In the context of this analysis, *resources* include tangible assets, such as equipment and money, intangible assets, such as political capital and, most significantly, the lives of U.S. personnel.

[7] The working group has adopted the following definitions: a *vital interest* is of broad, overriding importance to the survival, safety, and vitality of the nation; an *important interest* does not affect U.S. national survival, but affects the Nation's well-being and the character of the international security environment; *humanitarian and other interests* are interests that affect or involve U.S. values and leadership. These definitions are based on the 1997 *QDR Report*; and Secretary of Defense William S. Cohen, *Annual Report to the President and Congress, 2000*

[8] Definitions of major theater war, smaller-scale contingency, peacetime military engagement, and overseas presence are set forth in chapter 6.

[9] See chapter 5.

[10] Time and resource constraints precluded the working group from assessing risk in the first of two MTWs and also from examining operations below the MTW level with the force performance methodology. To reflect this, the study makes two basic assumptions in examining force performance risk: 1) that in all cases the first MTW of any combination will be executed at low-to-moderate risk, and 2) that force performance in operations other than MTWs will be executed at low-to-moderate risk. More analysis is needed to examine the first of two MTW performance and force performance in operations other than high-end warfighting.

[11] These operational objectives are not linked to any specific model. They could be applied to any theater-level campaign model, including TACWAR, JWARS, or a number of other approaches. The NDU QDR Working Group used RAND Corporation's Joint Integrated Contingency Model (JICM) as its primary force performance model. JICM limitations must be kept in mind in assessing results of this modeling: It is attrition- and fire-centered; it cannot readily capture the effects of strategic attack, maneuver, or the cumulative effects of superior command and control, including space operations and stealth; and maritime (blue-water) combat, including amphibious operations, cannot be modeled. As a result, JICM output on many of the measures of effectiveness used in this section are largely ground- and air-centric.

[12] These dates, specified in operations plans, are generally classified.

[13] Stability and occupation operations executed subsequent to the end of organized resistance are not calculated in this methodology. It is recognized that these operations may be large and, for practical purposes, open-ended. It is also evident that timing measures are generally more applicable in MTW-like scenarios than in many SSC-type operations.

[14] It is a generally accepted article of U.S. doctrine that shorter wars are more desirable, reducing the potential for friendly and civilian collateral casualties and minimizing the potential strain of holding an alliance together for an extended period of time. While this remains a good planning benchmark, the real world of theater operations may dictate other priorities. In the actual execution of a theater-level campaign, there may be good reasons why a CINC might take longer to initiate the counteroffensive or to complete a campaign than is assumed in prior planning.

[15] The loss rate can be measured at halt day, COFFD, or CCD. Ally losses are calculated separately (although this important data is captured and is part of the supporting analysis).

[16] Naval losses are further divided into losses of capital and noncapital ships. Capital ships are multipurpose aircraft carriers, guided-missile cruisers, amphibious assault ships, multipurpose amphibious assault ships, and nuclear-powered attack submarines. The loss of any capital ship raises the statistically derived level of risk by one level. For example, if U.S. maritime losses were under 2 percent, but a nuclear-power sub was lost, then the level of risk would be moderate instead of low.

[17] These measures of effectiveness are based on a representative sampling of losses in World War II, Korean, Southwest Asian, and Middle East campaigns (including D–Day, Korea 1950–53, the Yom Kippur War, and *Desert Storm*). The most recent data on naval losses is the British 1982 campaign in the South Atlantic. It could, however, be argued that these loss thresholds are based on large campaigns that may not be replicated again and, more importantly, that future campaigns might not enjoy the same degree of public support. One such view would adjust loss thresholds to levels of low, 1 percent, moderate, 2 percent, high, 5 percent; anything greater than this as unacceptable.

[18] For example, it was assumed that an enemy ground advance would halt when it sustained 50 percent casualties.

[19] At least one school of thought argues that the battlespace-oriented measures introduced as measures of effectiveness are less than complete. This argument proposes that a more complete set of measures would include ways of measuring accomplishment of friendly objectives without focusing on enemy fielded forces. The current state of modeling does not support the use of measures of this nature, although it is certainly deserving of further study.

[20] No attempt has been made to optimize concepts of operation in this analysis. They are treated as constants. Different concepts of operation might be optimized to yield more favorable results.

[21] The quantitative measurements used as thresholds in this section are notional and do not represent the final analytical product. They are included only to highlight the methodological approach.

[22] This methodology employs no direct measurement of material or training readiness; it presumes that deficiencies will occur more frequently in forces that are unable to meet service-mandated tempo limits.

[23] It might be useful to weight these differently, although the working group did not do so. An implicit weighting process is applied a priori to these measurements through the strategies that they support. For example, if a strategy chose to employ lesser levels of presence, engagement, and SSCs, they would receive equal weight in the evaluation process, but discrimination would already have been applied at the strategic level, in the emphasis selected for the elements.

[24] The working group performed only external, not internal, affordability risk assessment.

[25] The working group assumed low-to-moderate risk for the first of two MTWs and assumed low-to-moderate risk in force performance for all contingency operations other than the second of two MTWs.

[26] No assessment was provided for transformation and hedging, nor for internal affordability.

[27] The product of this analysis yields a force structure that supports NMS, which is keyed to the requirements levied on the military element of national power by NSS. However, if the NSS reflects a flawed view of the world, then NMS and its associated force structure may not be properly constituted to deal with the challenges of a security environment, regardless of how faithfully NMS executes its tasks assigned by NSS.

[28] George Box, "Robustness in the Strategy of Scientific Model Building," in R. L. Launer and G. N. Wilkinson, eds., *Robustness in Statistics* (New York: Academic Press, 1979), 202.

Chapter Eight

Identifying Force Structure Issues: Sifting the Screen

by Michèle A. Flournoy, Kenneth F. McKenzie, Jr., and John J. Spinelli

The efforts of the NDU QDR Working Group function like the big screen used in an archeological dig to identify potential artifacts that are worthy of greater scrutiny and subsequent detailed analysis. This concept has proven to be a useful organizing principle for the work of the group. Our objective in this chapter is to identify force structure and capability issues that merit further examination in the 2001 QDR or in follow-on analysis, not to recommend specific force structure changes. None of the issues in this chapter is an original idea; all have been raised in one way or another by influential members of the defense community. These issues generally fall into two baskets: potential tradespace candidates—that is, approaches to reducing the costs of implementing a given strategy while staying within the bounds of acceptable risk—and approaches to reducing the level of risk associated with a priority element of a strategy. Few of these approaches, however, have been subjected to rigorous or comprehensive analysis. Consistent with the big screen approach, the working group conducted a scoping-level analysis to confirm whether, and at what level, further analysis may be merited in the next QDR. The resulting insights and recommendations are provided in this chapter.

Based on the four strategy-driven integrated paths described in chapter 13, the working group analyzed a number of force structure and capability issues:

- Greater reliance on Reserve component (RC) warfighting contributions;
- Tradeoffs between enhancements to intelligence, surveillance, and reconnaissance and to precision munition and shooter platforms;
- Enhanced strategic lift and prepositioning;
- Critical warfighting enhancements;
- Force mix in the second major theater war;
- Modified end-state objectives and concepts of operations;

- High-demand assets for smaller-scale contingencies;
- Greater reliance on allies in warfighting;
- Meeting warfighting and homeland security requirements concurrently;
- Size and composition of the strategic reserve; and
- Investment priorities.

For each issue, we first determined the strategy alternatives to which it was relevant and developed a working hypothesis to be tested in the subsequent analysis. For example, in examining greater use of Reserve components in warfighting, we sought to test the hypothesis that using more Reserve forces in place of active-duty forces in the second of two MTWs would meet requirements with no appreciable increase in risk while allowing for a reduction in overall force structure that would result in substantial savings. We then examined each issue from three complementary angles: force performance, force sustainability, and cost. Force performance and sustainability were assessed, where possible, using the risk methodology described in chapter 7. The direct costs of specific modeling excursions were considered to provide a rough order-of-magnitude estimate of potential costs or savings. We developed this three-pronged approach to ensure that the potential usefulness of an issue in one area, such as improved force performance in MTWs, did not mask a serious shortfall in another area, such as unacceptable tempo strains on the force.

To assess force performance issues in the second of two MTWs, the working group used the Program Objective Memoranda (POM) force, updated Mobility Requirements Study movement data, and the RAND Joint Integrated Contingency Model to explore numerous hypothetical scenarios. The model's strengths include its ability to generate significant numbers of runs and outputs (with varying parameters such as effects of WMD, warning time, and the time between MTWs). However, it does have several shortcomings: its attrition-based and deterministic construct makes it less useful for assessing some aspects of force performance, and it does not represent naval and amphibious warfare except for strikes against land targets. Its limited focus and high level of aggregation constrain its capacity to analyze many specific service considerations in detail.

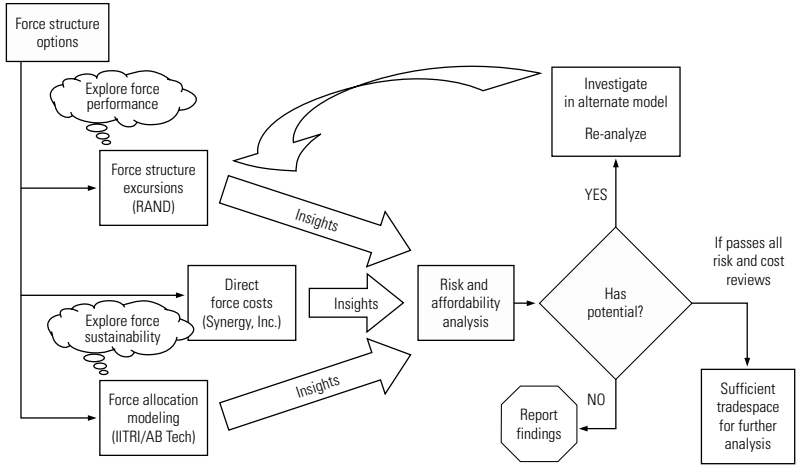
To assess force sustainability issues and identify potential high-demand assets in SSCs, the working group used a model developed by the Illinois Institute of Technology Research Institute/AB Technologies Group. This model allocated a selected list of forces from the POM force across a hypothetical 6-year future of strategy-derived SSC requirements. A key strength of this model was its ability to complete multiple runs that

replicate the force demands of each strategy alternative's likely posture of engagement. However, the model could not fully capture a number of issues and considerations related to SSCs, such as lift and tanker requirements, regional support by some units (such as special operations forces), engagement and other "time away from home" activities, overseas presence policies (for naval forces in particular), and readiness levels. Database constraints and minimal service interaction with the model limited the ability to analyze many specific service considerations in detail.

To get a sense of some of the costing implications, the working group relied on the Joint Cost Assessment Tool developed by Synergy, Inc. This tool identified aggregate peacetime direct costs of the specific forces under analysis. This model helped to identify potential rough order-of-magnitude costs or savings as well as the potential breakeven point for some excursions that were analyzed parametrically. However, the results clearly would not be a sufficient basis for program decisions. Because our assessment did not address two vital areas—indirect and future program costs—this scoping-level effort was insufficient to support any detailed insights.

As illustrated in figure 8–1, each excursion was subject to assessment by each model wherever possible. However, several issues could not be modeled effectively within this project—specifically, greater reliance on allies in warfighting, meeting warfighting and homeland security requirements concurrently, size and composition of the strategic reserve,

Figure 8–1. Modeling Relationships



and investment priorities. Each of these issues was researched and assessed but not modeled.

Whether modeled or not, all excursions required the interpretation of data and the application of judgment. Interpreting modeling can be more of an art than a science, warranting a healthy dose of skepticism and caution. The working group analysis was limited to a scoping-level analysis, so these insights and recommendations focus on avenues for further analysis rather than answers, serving as the big screen in the early stages of the dig.

The analytic agenda detailed below should not be seen or used as a barrier to making the hard decisions that must be made in the next QDR. The big decisions inevitably will have to be tackled without answers to every analytic question. What these insights and recommendations for further analysis offer is a menu of follow-on work to assess and refine some of the implications of the larger, imperative decisions.

Reliance on More Reserve Forces in Major Wars

Planned RC contributions to major wars already are quite substantial. A key issue for QDR force planners is whether to assume that the Reserves can play an even greater role in warfighting, particularly in a second MTW. Three key questions must be addressed here. Could using more Reserve forces in place of active forces meet CINC requirements with no appreciable increase in risk? If a corresponding reduction in active-duty force structure were made, could the resulting forces also meet peacetime requirements? Would this change result in substantial savings?

Each service has different missions, structures, and employment concepts for the use of Reserve components. They vary from employing large units as freestanding organizations to providing smaller units and individuals as augmentation or replacements. Some Reserve forces require substantial mobilization time before deployment, while others are well integrated into the active component's operations and organizations. In all cases, the Reserves are assumed to provide substantial capability at lower cost than their active-duty counterparts.

The working group explored whether and under what conditions existing Reserve forces could play a larger role in major wars. Specifically, could additional selected Reserve units, substituting for active-duty counterparts, meet existing CINC timelines and capability needs at reduced cost? Based on the working group assessment of mobilization timelines and requirements, the replacement of an Army heavy division with an Army National Guard heavy division was not supportable, as the

force could not meet CINC timelines in all theaters. However, when the mobilization base was enhanced with additional training sites and when new notification, mobilization, and training requirements were adopted, the Guard division was able to meet timelines in one of two theaters.

No similar impediments were identified to replacing three active Air Force fighter squadrons with Reserve squadrons, whose capability, mobilization, and training standards are comparable to the active force. However, specific unit types and numbers matter in this case, and the impact on the peacetime rotation base needs to be considered. For example, this substitution would not work for types of fighter squadrons in high demand in peacetime. Increasing the proportion of Reserve components in a high-demand force could establish substantial new tempo challenges.

Based on this analysis, the working group recommends that QDR planners validate these findings through additional analysis. Two major issues also should be addressed. First, options should be developed and assessed for increasing reliance on and integration of Reserve forces of all services in the fighting of major wars while exploiting the inherent cost savings. Specifically, the QDR should examine:

- Whether integration and employment of smaller RC ground units at lower levels of command and control (roundout concepts) are feasible;
- Whether the Air Force could increase its reliance on some types of Air Force Reserve fighters;
- Whether more use of Reserve forces could be made as replacements and augmentation, in contrast to stand-alone operational units;
- In all of these cases, whether reliance on the Reserves could be increased without incurring unacceptable impacts on the peacetime rotational base.

Second, we urge QDR planners to assess whether current levels of RC utilization in other missions such as peacetime operations, base generating forces, and backfill for active forces in SSC and engagement activities can be sustained. If so, planners should explore whether even greater use could be made of the Reserve components in such operations without exceeding acceptable levels of tempo for Reserve personnel.

Tradeoffs Between ISR/PM Enhancements and Shooter Platforms

Enhanced capability in the area of ISR promises near-real-time identification and targeting of many enemy forces through integrated systems and processes. At the same time, as precision munitions (PM) become more accurate and smaller, the concept of kills per sortie is replacing the

age-old sorties per kill. If ISR and PM enhancements can be combined to enable existing weapon systems to engage targets faster, more often, and with increased lethality, it may be possible to reduce the number of shooter platforms required to achieve the same effects. This possibility raises three key questions for the QDR. First, what types and quantities of ISR/PM capabilities will yield measurable increases in the effectiveness of the force? Second, if the Department of Defense invests in these ISR/PM capabilities, could it achieve the same effects with a smaller force? And third, what savings might be realized through reductions in present and planned shooter systems that would no longer be necessary?

The working group explored the potential linkage between ISR/PM enhancements, combat effectiveness, and cost using parametric analysis. Specifically, we examined whether percentage increases in combat effectiveness due to ISR/PM enhancements could enable percentage reductions in shooter platforms without any meaningful increase in risk. This scoping-level analysis appeared to confirm a relationship between increased effectiveness and potential platform tradeoffs and identified a potential break-even point for cost investment (in ISR/PM) to cost savings (in shooter platforms) for a specific set of shooter platforms.

However, the working group could not assess all aspects of force performance risk and cost. The level of our analysis was too broad to go beyond observing that a viable tradeoff between ISR/PM enhancements and shooter reductions may exist. QDR planners are urged to validate these findings through additional analysis and to explore more potential tradeoffs between ISR/PM and shooter platforms. We recommend that they:

- Develop specific ISR/PM enhancement options;
- Determine whether and to what extent each enhancement option would increase combat effectiveness;
- Model these enhancements with different combinations of shooter reductions to identify which provide the greatest saving without significantly increasing risk;
- Assess the impacts of any potential shooter reductions on the peacetime rotational base; and
- Determine the costs or savings associated with each option.

Enhanced Strategic Lift and Prepositioning

American military forces presently rely on strategic lift and certain prepositioned equipment to project and sustain combat power rapidly overseas. CINC timelines for the execution of major theater wars are predicated on the availability of adequate strategic lift. The rapid arrival

of potent combat forces can quickly halt aggression, stabilize crises, and facilitate subsequent military operations. A shortfall in strategic lift capability raises the risk in MTW execution, particularly in the second of two nearly simultaneous MTWs. This poses important questions for force planners in the next QDR: Would increases in strategic airlift, sealift, or prepositioned equipment better enable U.S. forces to meet CINC timelines and lower risk in the second MTW? If so, is the change worth the additional investment?[1]

The working group explored 10–20 percent increases in strategic lift and assessed their impacts on CINC timelines and risk for the second of two MTWs.[2] No changes were made to lift allocation. Somewhat to our surprise, the analysis suggested that strategic airlift and sealift increases of 10–20 percent generally did not significantly alter timelines for halting an initial enemy attack or for launching a U.S.-led counteroffensive. We recommend that QDR planners validate our findings through additional analysis to explore further the implications of enhanced lift and prepositioned equipment. Specifically, we suggest that they:

- Explore additional lift increases in conjunction with different approaches to lift allocation to identify options that would supply the highest priority CINC assets more rapidly, substantially improving warfighting outcomes and reducing risk;
- Analyze the lift and prepositioning requirements associated with a broader range of MTW scenarios;
- Assess increases in strategic lift and prepositioning commensurate with the need to move a larger force in accordance with CINC timelines if significant increases in force structure are contemplated in the QDR;
- Explore ways to decrease the demand for lift by increasing the combat power and effectiveness of units, thus reducing the lift required for multiple units (as part of transformation); and
- Assess the benefits of additional prepositioning and of different mixes of prepositioned equipment in key theaters.

Critical Warfighting Enhancements

Other critical warfighting shortfalls also contribute to assessments of higher risk in two-MTW scenarios. Among them are ISR/PM shortfalls; unfilled war-reserve secondary items such as spare engines, repair parts, and consumable supplies; a lack of support forces; and inadequate chemical, biological, and radiological detection and decontamination capabilities. These shortfalls pose a significant question for the QDR: How much

and what types of critical warfighting enhancements could increase the overall effectiveness of U.S. forces and lower risk?[3]

The working group developed a notional package of enhancements and assessed their effects parametrically by assuming that they increased the effectiveness of U.S. forces by 0, 10, 20, or 30 percent. These increases in combat effectiveness were then played in major war scenarios to observe their impact on force performance. This analysis suggested that increases in combat effectiveness of 10–20 percent yielded slight-to-significant reductions in warfighting risk, depending on the theater of operations. Thus, we recommend that QDR planners validate our findings through additional analysis and further explore the implications of critical warfighting enhancements by:

- Conducting detailed analysis of which enhancements would improve force performance most; and
- Prioritizing enhancements so that alternatives can be developed if full funding for all enhancements is not available.

Force Mix

Critical warfighting enhancements such as those noted above could increase the combat effectiveness of U.S. forces in major wars. If such increases in effectiveness can be achieved, force planners must ask two important questions in the next QDR: Would these enhancements enable changes in the mix of forces required for a second MTW without incurring undue risk? If so, would the changes result in substantial savings?

The working group began its analysis of this issue with the same assumptions of 0, 10, 20, and 30 percent increases in combat effectiveness that were used for the notional package of critical warfighting enhancements. We then made iterative adjustments to the force mix for the second of two nearly simultaneous MTWs (using current DOD planning scenarios) and assessed force performance based on current DOD end-state objectives and concepts of operations. These adjustments involved removing single units (for example, a heavy division, expeditionary brigade, or carrier) or a percentage of the force (for example, some share of Air Force fighters). Several levels of single-service and joint force reductions were considered.

This analysis suggested that across-the-board reductions—removal of a combination of units from across the services—generally increased risk the most. In addition, force decrements applied in the absence of any increase in combat effectiveness from critical enhancements caused an increase in

risk in nearly all cases. However, when increases of force effectiveness between 10 and 20 percent (based on critical enhancements) were assumed, some adjustments did not appear to increase the level of risk overall, suggesting that some force reductions or changes in force mix might be supportable if effectiveness of the remaining forces is enhanced. We recommend that QDR planners validate these findings through additional analysis and that they further explore the force mix changes and requirements reductions that might be enabled by increases in combat effectiveness. Specifically, we suggest that they examine the implications of critical warfighting enhancements for overall force requirements and force mix by:

- Conducting detailed analysis of whether critical warfighting enhancements actually can yield combat effectiveness increases in the 10 to 20 percent range;
- Analyzing various force mix options to determine which could yield low-to-moderate risk outcomes in major wars;
- Assessing alternative force mixes for the broader range of MTW scenarios; and
- Evaluating the costs of the alternative force mix options.

New Concepts of Operations

The new administration will need to determine the MTW end-state objectives that should guide U.S. force planning. In addition, proponents of Strategy B (described in chapter 5) and others have expressed considerable interest in new approaches to warfighting, especially new concepts of operations that would reduce the force requirements associated with fighting and winning MTWs. This raises two key questions for the next QDR. Could a new joint concept of operations for restoration of the geographic *status quo ante bellum* substantially reduce U.S. force requirements? If so, can this reduction result in significant savings and no appreciable increase in force performance risk?

The working group explored this issue for the second of two nearly simultaneous MTWs using the hypothetical campaign objectives of halting enemy aggression and launching a limited counteroffensive to restore the previous border. Although concepts of operations necessarily varied by theater, in all cases the defeat mechanism was air strikes and ground- and sea-launched missile strikes against advancing enemy forces. Limited counteroffensives were launched to restore border integrity as soon as the forces required to do so—much smaller than the traditional MTW "building block"—arrived in theater.

This scoping-level analysis offered mixed results. The alternative concept of operations coupled with a much smaller force consistently increased the risk of unacceptable outcomes in one of the MTW theaters examined, but in the other theater it was able to achieve success under certain circumstances. In the successful case, both the prewar movement of ground forces to the theater and the authorization to launch early air strikes before the enemy crossed the border were critical to success. The working group did not have the resources to test this alternative concept of operations against a broader set of scenarios or to vary the force structure package supporting it. Thus, we recommend that should the new administration decide to pursue new concepts of operations in planning for a broader range of MTWs, these findings should be validated through additional analysis. In addition, QDR planners should:

- Analyze similar concepts of operations in other MTW scenarios to gain broader insights on their viability and force requirements; and
- Undertake detailed analysis to determine whether other force structures could reduce the sensitivity of success of this concept of operation to the very early movement of ground forces and to preemptive strike requirements.

Meeting the Demands of SSCs and Presence

Whatever the strategy chosen in the next QDR, the associated posture of engagement will place specific demands on military forces to conduct operations in some number of SSCs, provide some level of overseas presence in key theaters, and undertake peacetime engagement activities with important allies and partners. Whether the Bush administration chooses a more selective or a more expansive engagement policy, peacetime operations can be expected to place high demands on certain segments of the force. In particular, low-density assets with unique capabilities may experience personnel and operational tempos that stress them and their respective services. This poses two important questions for planners in the next QDR: What is the anticipated magnitude of the tempo stress that a given strategy is likely to create? Are there high-demand assets for which additional force structure or manning should be provided?

The working group explored this issue by generating notional postures of engagement that reflect the levels of SSCs and other peacetime activities that each of the four strategy alternatives logically would require.[4] Generic operations and hypothetical SSC vignettes were used to identify the types

and amounts of forces typically necessary for these operations.[5] Six-year postures of engagement were developed, and illustrative force requirements were identified. Using service policies on tempo and force management, the impacts of each strategy-driven posture of engagement were analyzed.

This analysis confirmed the effectiveness of the DOD Global Military Force Policy (GMFP) program at tracking LD/HD assets. It also confirmed that continued careful and joint force management is warranted. Different strategy-driven postures of engagement—either more selective or more expansive than today—did not significantly alter the GMFP list of LD/HD assets. However, the analysis did identify several other potential candidates for LD/HD status—units that were subject, at least, to high demand or were otherwise at risk of becoming so because of potential tempo demands. These included, for example:

- Army Patriot air defense maintenance companies, certain types of medium truck companies, and military police companies (combat support);
- Navy carrier battle groups, amphibious ready groups, and maritime prepositioning ships ;
- Marine Corps unmanned aerial vehicle squadrons, refueling and transport aviation (KC–130) squadrons, and Fleet Anti-Terrorist Security Team platoons;
- Air Force B–2 stealth bombers, F–16 CJ aircraft for suppression of enemy air defenses, and F–117 stealth fighters; and
- U.S. Special Operations Command psychological operations tactical battalions, AC–130 gunships, and the 528th Support Battalion.

Thus, the working group recommends that the QDR validate these findings through additional analysis and that it:

- Identify the force requirements associated with the anticipated posture of engagement of a given defense strategy;
- Wargame or model force structure alternatives against the anticipated posture of engagement to identify potential high-demand or stressed units and assets;
- Determine whether potential force management approaches, such as force substitution or contracting out functions, or force structure adjustments, such as unit conversions or a different mix of active and Reserve components, could mitigate the impacts of unacceptably high tempo demands; and
- Develop and analyze alternative rotational and overseas presence policies that could improve force management and reduce the force structure necessary to meet posture of engagement requirements.

Greater Reliance on Allies in Warfighting

Allied and coalition political support, access to key bases and facilities, and host-nation support will be critical to success in any conceivable major war of the future. The key question for QDR force planners in this regard is what assumptions to make about allies and coalition partners when assessing force requirements for major wars. More specifically, should the United States plan on greater allied force contributions in specific scenarios? Would such force contributions enable corresponding reductions in the Armed Forces?

Two approaches must be considered. The current DOD approach includes only the forces of those countries the United States is defending (for example, the Republic of Korea or the Gulf Cooperation Council states) and those with whom we have relevant treaties (such as our NATO allies in Article V operations). The alternative approach would include the forces of all allies and potential partners who demonstrate both the willingness and the ability to contribute militarily significant forces to a particular scenario. We define *militarily significant* as forces with the ability to deploy and sustain brigade, squadron, or naval task force units roughly equivalent to U.S. counterparts in an out-of-area theater without requiring extensive U.S. support. This is a high standard, but nothing less would permit reduction of U.S. force requirements.

Based on the working group's assessment of current allied capabilities, only a few allies not already included in U.S. force planning for particular warfighting scenarios could meet this standard, namely the United Kingdom, Australia, and France. Others—such as Germany, Italy, and other NATO allies—could deploy substantial forces if significant U.S. support were provided. Still others might be able to contribute small but significant specialized capabilities, such as mine clearing, field medical support, engineering, or linguist units, or make small force contributions that would have disproportionate political significance. In most cases, however, greater allied force contributions would require additional U.S. support in areas such as lift, sustainment, or C^3. Furthermore, the ability of allied forces to meet CINC timelines would depend on whether forces were already involved in other contingencies as well as on unit readiness, geography, and lift availability. Allied force contributions would, moreover, be offered on a case-by-case basis.

The working group concluded, therefore, that it is important to pursue greater reliance on those allies who can make militarily significant force contributions to the major wars of the future. However, in the near

term, such contributions are not likely to be large enough, certain enough, or self-supporting enough to enable corresponding U.S. force reductions unless there is a dramatic change in assessment of what specific allies can bring to the table. Therefore, the working group offers the following recommendations for the next QDR:

- The United States should open a bilateral dialogue with those allies potentially willing and able to make militarily significant force contributions to a major war, aimed at securing a formal commitment to providing forces in a particular scenario.
- If such a commitment is made, the United States should conduct integrated operational planning and should determine the impacts of an ally's force contributions on U.S. force requirements.
- The United States should develop and pursue initiatives, such as the Defense Capabilities Initiative, to enhance the potential future force contributions of other allies and partners to major wars and other coalition operations.[6]

Meeting Concurrent Warfighting and Homeland Security Requirements

The DOD provides critical support to civilian agencies for a variety of homeland security missions. In some cases, such as consequence management in response to WMD terrorism on U.S. soil, the primary contribution by the military would be its specialized assets designed to deal with chemical or biological incidents.[7] However, many of these assets also would be crucial to the U.S. ability to fight and win a major war abroad and probably would be deployed early to support CINC warplans. Given that the most likely time for a domestic WMD terrorism event to occur is just before or during the execution of a major war, the Pentagon needs to assess whether the United States can meet homeland security requirements at the same time it is fighting one or more major wars.

This recommendation applies not only to domestic consequence management but also to the full range of potential DOD homeland security missions. The challenge for QDR planners is, first, to assess the requirements for supporting the full range of homeland security missions concurrently with fighting and winning one or more major wars, and second, to assess whether the pool of military assets that would be dual-tasked in such cases should be enlarged. Failure to do so could force the President to choose between denying adequate DOD support in response

to a major domestic crisis and denying one of the CINCs what is needed to fight and win a major war abroad at an acceptable level of risk.

Based on our analysis of this issue, the working group offers the following recommendations for the QDR:

- Identify the full range of potential DOD missions in support of homeland security.
- Develop the necessary planning factors (assumptions about types and concurrency of missions) and assess the associated DOD requirements.
- Identify areas of overlap between DOD homeland security requirements and warfighting requirements.
- Compare the combined requirements to programmed force structure to determine whether additional forces or capabilities are required to meet both homeland security and warfighting requirements concurrently.
- Determine which assets (most likely the Reserve components) could be converted or reoriented to meet the above requirements.

Size and Composition of the Strategic Reserve

In principle, the size and composition of the strategic reserve—those forces that are not directly tasked in critical contingency plans—should be tailored to the requirements of a given defense strategy. In practice, however, much of the strategic reserve has been protected in past defense reviews because of its strong political support in state houses and on Capitol Hill. Since the end of the Cold War, parts of this force have retained a large infrastructure and force structure inconsistent with the most pressing military challenges. This continuing inconsistency puts the question of the size and composition of the strategic reserve back on the table in the next QDR.

The four primary strategy alternatives outlined in chapters 5 and 13 would have different implications for the size and composition of the strategic reserve. Strategy A would size and structure the strategic reserve for three primary functions: to provide forces capable of ensuring success in major wars more demanding or prolonged than anticipated, to substitute for forces committed to contingency operations, and to provide specialized forces committed to homeland security missions. In a resource-constrained environment, this strategy would call for converting underutilized or low-demand elements of the strategic reserve to fill critical shortfalls in warfighting capability or to enlarge the pool of assets available to support homeland security missions.

Strategy B would focus the strategic reserve primarily on homeland security, building its capability to support missions such as territorial defense,

domestic consequence management, critical infrastructure protection, and other activities in support of domestic civil authorities. Its secondary mission would be to provide a hedge against a more difficult or prolonged major war. Accordingly, this strategy would call for reorientation and significant streamlining of the strategic reserve to meet these two challenges.

Strategy C would focus the strategic reserve on providing additional warfighting capability in the event that a second major war is more difficult or prolonged than expected. It would convert any elements not identified as part of this hedge to address critical warfighting capability shortfalls. It also would increase the modernization and readiness of those reserve elements tasked in warplans or identified as part of the warfighting hedge to improve their ability to meet CINC requirements.

Strategy D would maintain a much smaller strategic reserve oriented primarily toward augmenting active component forces in long-term presence, engagement, and SSC operations. Under this strategy, the primary purpose of the strategic reserve would be tempo relief for the active force in unusual circumstances. A secondary focus would be providing support to civil authorities for homeland security. This strategy probably would require a large active-duty force structure with more capability that could be diverted in time of emergency. Thus, the combat capability of the strategic reserve could be substantially reduced, based on the belief that a strategy of fuller engagement would provide greater strategic warning of emerging threats and perhaps even prevent a second MTW from ever occurring.

Based on this assessment, the working group recommends that QDR planners develop strategy-driven options for the size and composition of the strategic reserve and assess the following factors for each option:

- Ability to support the strategy's priorities for strategic reserve;
- Associated risks, given the strategy's priorities;
- Robustness to meet priority missions at the state (rather than federal) level; and
- Potential costs or savings.

Investment Priorities

The four primary strategy alternatives described in chapter 5 also have widely divergent implications for the objectives and priorities of DOD investment in science and technology, research and development, and procurement.

Strategies A and C would balance the objectives of urgent recapitalization for parts of the force with long-term transformation of the force

overall to meet future challenges, such as the potential rise of a near-peer competitor in 2025 or beyond, or the nearer-term prospect of the use of antiaccess strategies and asymmetric means by regional adversaries. In short, both of these strategies would aim to balance funding among S&T, R&D, current acquisition programs, new starts, concept development and experimentation, and critical warfighting enhancements.

Strategy B would, instead, accelerate funding for more transformational systems and units aimed at maintaining U.S. military superiority in the face of a future near-peer competitor or a lesser adversary who employs antiaccess strategies or asymmetric means. Characteristics of transformational systems would include integrated architecture, extended ranges, reduced manning, increased mobility, enhanced precision, and stealth. Strategy B would reduce or cancel buys of nontransformational systems to free up resources for its higher priorities such as increased investment in S&T, more robust concept development and experimentation, and new starts such as national missile defense.

Strategy D would adopt a very different set of modernization priorities. It would reduce or cancel buys of more expensive, high-end transformational systems in order to recapitalize or systematically replace aging platforms to maintain a larger force. Strategy D would favor procurement of additional numbers of proven systems, upgrades to existing platforms and systems, service life extension programs, capability enhancements such as improvements to command, control, communications, computers, intelligence, surveillance, and reconnaissance assets, precision munitions enhancements, and force protection improvements. To the extent that it would invest in transformation, it would focus on the low end of the operational spectrum, such as new concepts and capabilities for conducting smaller-scale contingencies.

Based on this assessment, the working group offers the following recommendations for the QDR:

- Identify strategy-based objectives that should drive science and technology, research and development, and acquisition decisions.
- Develop strategy-driven options for DOD investment.
- Assess investment in specific systems and capabilities according to these objectives and tailor specific options accordingly.
- Assess near-term risks, long-term risks, and opportunity costs of each option.
- Determine the costs (or cost savings) of each option.

Conclusion

This chapter has outlined potential force structure and capability issues that are worthy of more detailed analysis by QDR planners. Some of these issues are contentious because they challenge the conventional wisdom, raise fundamental questions regarding service roles and missions, or challenge fiercely guarded rice bowls. Nevertheless, the QDR working group believes that these areas warrant a harder look with more time, depth, and analytic support than the working group was able to devote to them. In any archaeological dig, the early sifting will yield both gold and dross. It will be the task of QDR 2001 decisionmakers to decide which of these issues are worthy of greater analysis and ultimately action.

Notes

[1] DOD recently conducted an extensive internal assessment of mobility requirements, the *Mobility Requirements Study, 2005* (known as MRS–05), which undoubtedly will provide the basis for much of the Department's analysis of these issues in the 2001 QDR. Our recommendations are meant to supplement the work that has already been done in this area.

[2] Impact on the first MTW was not investigated. The only consideration of prepositioning was the assumption that an existing heavy division afloat was deployed to the first MTW and that once these ships were offloaded, the additional strategic sealift would be available to move other forces from the United States.

[3] Our notional set of critical enhancements to address identified capability shortfalls was by no means comprehensive. For example, any QDR assessment of potential candidates for increasing combat effectiveness while reducing costs also would have to consider a variety of space-based assets and capabilities.

[4] This analysis was not able to capture some of the other factors that contribute significantly to operations and personnel tempo, such as training away from home station and peacetime military engagement activities.

[5] Because of the model's design constraints, not all unit types were tracked and analyzed for each service. As a result, the outputs are representative rather than comprehensive: other parts of the force (for example, tankers or lift) might also be high-demand units.

[6] For more on the Defense Capabilities Initiative, see Office of the Secretary of Defense, *Report on Allied Contributions to the Common Defense*, March 2000, II–2—II–3.

[7] Among these specialized assets are chemical companies, biological incident detection system platoons, technical escort units and their chemical-biological response teams, and chemical-biological incident response force units.

Chapter Nine

The Future of U.S. Overseas Presence

by Roger Cliff, Sam J. Tangredi, and Christine E. Wormuth

Blessed by favorable geography, sound defense policies, and a propitious history, the United States has not had to fight a major war on American soil against a foreign power for over 187 years.[1] Instead, it has been involved in conflicts ranging from smaller-scale contingencies to global wars that have taken place in international seas and airspace or on the territory of allies or opponents. Considering the physical devastation that war can bring—to say nothing of the military and civilian casualties—the fact that conflicts have been conducted away from the U.S. homeland can be considered one of the more fortunate aspects of the American experience.

But this did not occur by grace alone. For much of its existence, the United States has maintained an overseas military presence in an effort to prevent hostilities from reaching North America. For this reason—and in response to American involvement in conflicts overseas, most notably the Second World War—the contemporary U.S. military has been structured primarily as a power-projection force.[2]

However, projecting power into a distant theater without military forces already in place to slow the enemy advance, and protecting the infrastructure required to receive the incoming friendly forces and the forces themselves until they can establish their own defenses, are extremely difficult.

Moreover, the actual deterrent effect of a robust power-projection capability never has been particularly clear. During the Cold War, the United States stationed a considerable share of its active-duty forces overseas to act as both the means of facilitating the arrival of U.S. power-projection forces and as a deterrent to the actual outbreak of conflict. U.S. forces were stationed at the Fulda Gap in Germany and in other places in Europe and in Turkey to be able to respond immediately to a Warsaw Pact attack and

to buy time for the mobilization of other NATO forces and the projection of forces from the continental United States. They also were intended to be a deterrent to war in the event of an expanding crisis. U.S. forces stationed in Asia, notably Japan and Korea, also served as a deterrent to possible crises or, as in the case of Korea, more immediate ones.

The forward positioning of naval forces within regions of potential crisis has been a U.S. policy since long before the Cold War. This naval version of overseas presence, independently known as naval presence or forward presence, has been an integral part of American diplomacy and has functioned to protect American access to foreign trade. During the Cold War, the deterrent element of naval forward presence was emphasized. A key difference is that naval forces operating at sea effectively are sovereign U.S. territory under the law of the sea, while the stationing of land-based forces overseas is subject to the desires of the host nation and is governed by bilateral or multilateral agreements.[3]

With the end of the Cold War, some have questioned the need to station extensive U.S. forces overseas, particularly the land-based forces whose status-of-forces agreements require periodic renewal—a procedure that sometimes involves contentious diplomatic effort. Removing U.S. forces from overseas locations sometimes is seen as a potential cost savings; however, given the financial and material support that overseas forces receive from several key host-nation allies, this belief may be false. At the same time that the end of the Cold War may have called the policy into question, the United States has taken on an additional overseas presence commitment by stationing forces in the Arabian Gulf region in the wake of Operation *Desert Storm*. Such U.S. forces are meant to deter renewed aggression by Iraq or potential action by Iran, and to maintain the United Nations (UN) sanctions regime against Saddam Hussein.

The U.S. overseas presence force posture will be examined as a part of the Quadrennial Defense Review in 2001. This chapter examines the policies and issues of the stationing of U.S. forces in three particular regions: Europe, the Pacific, and the Arabian Gulf. The primary purpose is to identify options for the Bush administration to consider when crafting the overseas presence portion of its defense policy. The sections that follow describe—for each of the three regions—the current U.S. posture, emerging regional missions for the presence forces, the potential mismatches of posture and policy that have developed in the past decade, and the possible political impact of changes to the current force posture.

Europe

At the height of the Cold War, U.S. forces in Europe numbered close to 325,000. Stationed mainly in the United Kingdom, Germany, and Italy, these forces served two major purposes. First, American forces on European soil were a physical symbol of the U.S. commitment to the security of Europe. Second, had a war with the Soviet Union broken out, these forces were the first line of defense. With the dissolution of the Warsaw Pact and later the Soviet Union itself, the rationale for maintaining Cold War force levels in Europe no longer existed. DOD began reviewing force levels in Europe in 1991 and then began the largest drawdown of active-duty forces from Europe since permanently stationing troops there in the late 1940s.

U.S. Interests

In addition to the continuing U.S. commitment to NATO, economic, political, and cultural ties to Europe remain strong—and are perhaps the strongest in the global community. Trade between the United States and European nations totals over $1 billion daily. Europe shares American democratic political and social values and is its strongest military and diplomatic partner in working to strengthen the international community. At the same time, the experience of two global wars with origins in European conflicts makes the commitment to supporting peace in Europe a foundation of U.S. foreign policy. Much has changed since the collapse of the Soviet Union, but a stable and secure Europe remains important to the United States. Therefore, the United States will remain seriously engaged in European affairs, and the Armed Forces will be an important tool in the transatlantic relationship.

About 100,000 military personnel remain permanently stationed in Europe. The majority of them are members of elements of larger units that were stationed there during the Cold War. Although most U.S. forces in Europe are still stationed at Cold War-era bases, the missions that these forces perform have changed in nature and increased in number since the fall of the Berlin Wall. Using a force posture that was designed to meet outdated needs has created what some consider a mismatch between requirements and forces. Tempo challenges and difficulties associated with SSC operations such as the Stabilization Force (SFOR) in Bosnia and Operation *Allied Force* in Kosovo are, at least in part, manifestations of the strains thus generated.

In the last 5 years, forces under the Commander in Chief, Europe Command, have conducted nine noncombatant operations, patrols of three no-fly zones, two major humanitarian assistance operations, nine peace enforcement operations, and two major coercive air campaigns. These forces also have conducted innumerable exercises with NATO allies and partners, military-to-military contact programs, training and education programs, and other engagement activities. As they were during the Cold War, most of these forces are stationed in Britain, Germany, and Italy. In addition to permanently stationed forces, the Navy and Marine Corps are regularly deployed to the European theater, and the headquarters of the U.S. Sixth Fleet is located in the Mediterranean. The United States also has maintained forces on the ground in Bosnia and Hungary, since 1995. U.S. European Command (EUCOM), headquartered in Stuttgart, and the forces assigned to it are responsible for monitoring and responding to events in all of Europe, including many of the former Soviet republics, as well as countries in North Africa and the sub-Saharan region. U.S. military personnel in Europe today are busier than ever before, and although they have done an admirable job advancing U.S. objectives in Europe, the United States would be better served by a force posture designed specifically to address the existing and likely future security environment in that region.

Potential Challenges

The former Soviet Union no longer dominates the threat scenario for Europe, but it will present challenges and risks for the United States and its NATO allies for at least the next 10 years. The evolution of Russia and its relationship with the Alliance, efforts by NATO to adapt to the new strategic environment, continuing instability in the Balkans, and the growing threat posed by the proliferation of NBC weapons dominate the security environment in Europe.

Russia no longer poses a major threat to the stability of Europe, although its uneven and unpredictable evolution toward free markets and democracy will affect the broader security environment for Europe. The United States and its allies must be concerned about the potential spread of NBC weapons and expertise from Russia and the other newly independent states that emerged from the end of the Cold War.

Although NATO also has changed since 1991 to meet new realities in Europe, it remains the preeminent security mechanism for the continent. The Defense Capabilities Initiative (DCI), launched in 1999 to strengthen allied military capabilities, and efforts to reinvigorate the European Security

and Defense Identity (ESDI) may further strengthen NATO ability to address European security challenges. The Alliance is likely to invite additional countries to join it in the next several years. NATO also will continue broadening its focus beyond member territory to address instability in southern Europe and threats posed by the proliferation of NBC weapons and ballistic missiles in North African and the Middle East, and perhaps ultimately to deal with broader interests in the Persian Gulf area.

Many aspects of the current and future security environment in Europe are reasonably clear, but certain key variables will have a major impact on European security and the U.S. strategy toward Europe in the future. The future of Russia is the primary unknown with critical implications for Europe and the United States. The United States and its European allies and friends will be monitoring developments in Russia very carefully, trying to strike a balance between assisting the Russian transformation wherever possible and maintaining a clear-eyed perspective on its long-term strategic orientation. Whether the DCI and ESDI efforts are successful also may affect U.S.-European relations significantly. If the Europeans succeed in improving their military capabilities, the nature of U.S.-European roles in NATO may evolve considerably.

The deployment of a national missile defense would have profound implications for European security. Many European nations argue that an NMD system would fundamentally undermine the Western relationship with Russia, particularly if the United States were to abrogate the Anti-Ballistic Missile Treaty to deploy the system. Europeans also fear that the system could increase instability in regions such as Asia and could create different zones of security in NATO in which some nations are more secure than others. Unless all allied nations were to move from shared vulnerability to shared invulnerability under a NATO-wide missile defense system, many Europeans fear that the European members of the Alliance could become detached from the United States. Finally, even if these European members were unanimous on the need for an NMD system, almost all of them have grave concerns about how to finance it. Although many of these concerns can be managed as the United States deliberates whether to deploy an NMD system, the issue will remain important in the transatlantic relationship in the years to come.

New Missions

In light of this complex security picture, the United States will need to maintain a strong partnership with its European allies and friends to ensure that Europe remains strong, stable, and secure. The U.S. military

will play an important role in maintaining and strengthening the health of the transatlantic partnership.

In the last decade, the U.S. military has been on the leading edge of establishing bilateral defense relations with many countries that formerly were behind the Iron Curtain. American forces stationed in Europe or assigned to EUCOM are uniquely positioned to influence developments in the European security environment positively. Engagement activities involving U.S. military personnel include exchange programs, exercises, port visits, and regular assignments at NATO headquarters where American and partner-country personnel work side by side. These engagement activities, coupled with the regular overseas presence in Europe, ensure frequent and regular contact between U.S. forces and those from partner countries. Such contact helps to develop bilateral defense relationships and in many cases leads to productive collaboration on matters of mutual security concern.

Through the Partnership for Peace program, the United States and its allies seek to build positive relations with the former Warsaw Pact countries and the states of the former Soviet Union. American military personnel worked with their counterparts in Poland, Hungary, and the Czech Republic to help prepare them to join NATO. American forces in Europe also have worked closely with such nations as Ukraine, Romania, Slovenia, Bulgaria, and other partner countries, advising on how best to restructure and to reform their militaries and how to increase interoperability with NATO so that they can participate in peace operations such as SFOR or the Kosovo Force.

Finally, U.S. forces stationed in Europe play an important role in ensuring strong defense relations among the allied countries themselves. U.S. military personnel are stationed at NATO headquarters throughout Europe as part of the integrated military command structure; U.S. personnel have served in roles from Supreme Allied Commander in Europe to enlisted soldier in a ground unit committed to NATO operations. American forces in Europe participate regularly in Alliance exercises and also visit individual countries and conduct activities on a bilateral basis. These regular interactions generate the trust and mutual understanding that bind the NATO members to each other in times of crisis and that enable military forces from diverse nations to operate together during conflicts, such as the air campaign over Kosovo.

The major air operation over Kosovo in 1999 is just one example of the many ways in which U.S. forces are called upon to respond to crises

in Europe and in neighboring regions such as Africa and the Persian Gulf. American forces in Europe help to maintain stability in the Balkans, conduct noncombatant evacuations following natural disasters or violent political uprisings, and serve as peacekeepers after political resolution of conflicts such as the war in Bosnia-Herzegovina. U.S. forces in Europe are the foundation of the American Article V commitment to its NATO allies, however unlikely such a contingency appears in the current security environment.

Precisely because the likelihood of an Article V conflict is, and is likely to remain, so low in Europe, the primary role of U.S. forces there no longer is to be the tripwire for a major land war against a powerful adversary. American forces today perform the critical shaping tasks that help to maintain peace and stability in the region and are the U.S. first responders to conflicts that arise when shaping activities are unable to contain violence. Bringing forces from the continental United States to participate in exercises, exchange programs, and training activities is feasible, but the quality and quantity of these activities would be significantly lower than if in-theater forces are used. Forces in theater can exercise more frequently and longer because they do not have to spend time traveling across the Atlantic. They also are better positioned to build relationships with foreign counterparts because the same personnel can attend multiple events and develop substantive connections over time.

Similarly, forces in theater are better able to respond quickly to emerging conflicts than forces stationed in the United States. Operation *Allied Force* would have been significantly less effective if all or even a significant portion of the U.S. troops and equipment were required to be transported from the United States. Operations such as noncombatant evacuations, no-fly zone patrols, shows of force, and other SSCs would be much more difficult if the only forces available for such operations had to be brought from the United States. Many SSCs in the region and in surrounding areas might become more serious conflicts.

American forces in Europe not only are concerned with current engagement activities and crises, but they also must focus on preparing to deal with tomorrow's challenges. Troops will be transforming themselves as part of the ongoing evolution of the U.S. military and will play an essential role in encouraging transformation within the militaries of NATO allies. A strong transatlantic relationship is essential to ensuring that NATO allies continue to improve their military capabilities. If the relationship begins to deteriorate, the Europeans may move toward maintaining

only the basic military capabilities needed to address security problems in the immediate area.

Some might argue that a greatly reduced American presence in Europe would force the Europeans to assume greater responsibility for their own security, but past experience indicates that the Europeans might instead choose not to address important security concerns—as happened in the early years of the conflict in the former Yugoslavia. European nations with only minimal capabilities would be in no position to join the United States in coalitions of the willing to address larger security threats outside the European area. A significant American military presence in Europe is essential to demonstrating the enduring nature of the transatlantic relationship and to providing a continuing incentive for the Europeans to ensure that their military forces can operate effectively with the U.S. military in the future.

The internal transformation process, the Defense Capabilities Initiative, is the cornerstone of the Alliance effort to reinvent itself for the future. Energetic U.S. participation in DCI will be important, but the European members of the Alliance will ultimately determine its success. Current budget constraints in Europe are a major hurdle to significant improvements in European military capabilities. As the Europeans try to surmount this obstacle, U.S. forces in Europe will need to manage their own transformation process to avoid widening the capability gap between themselves and other NATO forces. The United States will not want to compromise its own military capabilities to remain interoperable with its allies, but it will want to avoid exacerbating the types of interoperability problems that were evident during the air war over Kosovo, such as the lack of compatible secure communications, of all-weather-capable European attack aircraft, and of European precision-guided munitions. The Alliance was able to manage these problems during the Kosovo conflict, but if NATO had to confront a more capable adversary than the Serbian military, such problems could prove to be a serious weakness. Finding creative strategies to remain sufficiently interoperable with its allies while avoiding dumbing down its own transformation process will be one of the more challenging tasks facing the United States in the future.

New Forces

The missions of U.S. forces in Europe have changed: containment is out, and engagement is in. Balkan peace enforcement operations in which NATO troops and Russian soldiers work side by side have replaced preparations for a clash of the titans on the battlefields of Central Europe.

However, the types of forces that the United States maintains in Europe have not kept pace with the changed missions. To alleviate readiness and retention concerns and to give U.S. forces the tools that they need to perform their missions more effectively, the United States should reshape its forces in Europe to be more deployable, sustainable, and flexible, and less oriented overall toward heavy combat operations.

Because the U.S. force structure in Europe still reflects its Cold War-era configuration, it is not designed to move troops quickly over long distances to a conflict. Ground forces in Europe are particularly cumbersome to deploy to relatively distant and primitively equipped staging areas such as Taszar in southeastern Europe or the staging areas in Albania used during Operation *Allied Force*. Ferrying the 10,300 pieces of equipment the Army requested for Task Force *Hawk* in Albania during the Kosovo operation required 550 C–17 flights. This cargo included M1A1 Abrams tanks (which are too heavy for most roads in Albania), 37 Blackhawk and Chinook helicopters to support the 24 Apache helicopters that made up Task Force *Hawk*, and approximately 6,200 troops sent to the base in Tirana to support the task force. Although the Army eventually transported all the equipment to Tirana, it faced major obstacles along the way: record rainfall, thigh-high mud, and primitive landing pads at the Rinas airport. Conditions such as these probably will be the rule rather than the exception in future operations in Europe.

Responding to specific criticism of its performance in Kosovo and to the broader argument that it is too slow and risks becoming irrelevant to modern conflicts, the Army has begun a transformation process with the goal of developing a mix of light, medium, and heavy forces. The centerpiece of this transformation process is development by 2003 of three to five rapidly deployable interim brigades with new medium-weight, wheeled assault vehicles. Army weapons designers hope to design a future combat system to replace the Abrams tank by 2010. Such a transformation, if successful, would greatly improve the ability of U.S. ground forces in Europe to respond effectively to future security challenges.

By contrast, naval forces assigned to EUCOM are inherently highly deployable. Naval assets such as an amphibious ready group/Marine Expeditionary Unit (MEU) or a carrier battle group are valuable assets that are used frequently to respond to fast-breaking developments. Naval assets are relatively scarce, however, so a carrier battle group is assigned to EUCOM for only 270 days a year and the MEU for just 300 days a year. Carrier battle groups are particularly scarce assets, and without a significant increase

to the U.S. defense budget, the Navy is not likely to build additional carriers beyond what already is envisioned in the defense program. At a minimum, a comprehensive policy review of how naval assets are allocated globally would ensure that the United States is applying these scarce assets as wisely as possible.

Another problem is that much of the U.S. force structure in Europe is oriented toward theater warfighting rather than the types of missions the military in Europe is now called upon to perform. In light of existing mission requirements in Europe and the fact that much of the heavy combat force required for a major theater war in a region such as the Persian Gulf could come from the continental United States, shifting the balance of forces based in Europe from heavy combat units toward medium-weight units and combat support and combat service support units should be considered. Eliminating combat-heavy forces in Europe altogether would be extremely unwise, but exchanging some portion of the existing heavy brigades for the new medium-weight units would greatly enhance the Army ability to address current threats in Europe effectively. These units would be able to move more quickly to a conflict than today's heavy units, but they also would retain sufficient combat power and force protection measures to maintain their combat effectiveness. A partial shift away from heavy combat units also would enable the United States to field more support units in Europe; these units perform many of the missions needed for SSCs. Medical, construction, and communications units, as well as the entire range of special operations forces stationed in Europe, are experiencing particularly high operational tempo rates. Increasing the number of support units in this theater would better equip the force structure to meet future challenges.

Although the threat posed by weapons of mass destruction is growing significantly, U.S. forces in Europe do not yet have a significant capability to defend against such threats or to operate in a WMD environment. American forces in Europe and worldwide need better protective gear and chemical and biological weapons detectors and a robust theater missile defense (TMD) system to protect them from missile threats on the periphery of Europe. The United States already is working to field this equipment, but it may need to place an even higher priority on this part of the defense program. Similarly, the U.S. military has made significant strides in integrating awareness of WMD threats into its program and planning processes in the last several years, but this issue still is not taken

into account sufficiently as the Pentagon determines its future requirements and budget needs.

Political Implications

Adapting the U.S. force presence in Europe to suit future security needs better not only makes military sense, but it also makes political sense both here and in Europe. A thoughtful, well-implemented plan to restructure forces in Europe would reassure European allies of the continued commitment by the United States to their security.

A well-structured American military presence in Europe, improved European military capabilities, and Congressional and public support for U.S. involvement in European security are inextricably linked. The NATO DCI, which is critical to bringing about real improvements in European military capabilities, will not succeed without strong American support and leadership. In order to lead effectively in Europe, the United States will need to be able to demonstrate, through a force structure configured to deal with the real challenges Europe faces, that it is committed to preserving European security. The United States will need Congressional support for transforming its forces in Europe, but if European NATO members do not improve their military capabilities over the next several years, Congressional support for future American involvement in European security affairs will waver. Legislative burdensharing provisions will proliferate and become more stringent, and the drive to move troops out of Europe altogether could gain significant momentum.

If managed properly, however, adapting U.S. forces in Europe could help push these interrelated trends into an upward rather than a downward spiral. An adapted U.S. force posture in Europe would reassure NATO allies that America remains seriously committed to helping Europe preserve its security and would provide a significant opportunity for the United States to lead by example in building support for the DCI. If, for example, the United States were to station medium-weight interim Army brigades in Germany, it would help the German government make the case to its own public and Parliament for lightening its extremely heavy combat structure, which is essential to making the German military more relevant for future operations.

Restructuring aspects of the U.S. military presence in Europe also would provide an opportunity to reevaluate American and allied roles. A fundamental review of defense roles can realistically take place only when NATO members are confident that new capabilities exist to support new responsibilities. A serious dialogue on this issue would reduce suspicions

on both sides of the ESDI debate. Such a dialogue will be essential to ensuring that the effort to flesh out a common foreign and security policy for Europe does not become a zero-sum game, pitting the European Union against NATO. A newly balanced division of labor within the Alliance would strengthen both European support for NATO and Congressional support for continued American involvement in Europe by disarming critics who charge that the Europeans are content to let the United States shoulder the burden on security issues.

The Middle East

The U.S. military presence in the Middle East, and particularly in the Arabian Gulf, is historically and quantitatively different than its presence in Europe. An average of 15,000 U.S. military personnel are deployed—most rotationally or temporarily—within the region. Much of this presence is naval, and the permanent footprint is relatively small. Support for the flow of follow-on forces exists primarily in the form of prepositioned war material, along with earmarked afloat prepositioned equipment on board ships anchored at Diego Garcia in the Indian Ocean.

The use of Diego Garcia is a helpful legacy of the Cold War, as is the rotational deployment of naval forces with a small U.S. fleet headquarters permanently located in Bahrain. But much of the additional access to supporting infrastructure is the result of U.S. leadership of the multinational coalition that ejected Iraqi forces from Kuwait, and most of the personnel within the region have an ongoing military mission in maintaining UN sanctions against the rogue regime of Saddam Hussein. This mission gives much of the U.S. land-based presence in the region a very temporary flavor. Symbolic of this is the fact that the headquarters for U.S. Central Command (CENTCOM) is located near Tampa, Florida, not in the Middle East.

Unlike Europe, the host nations within the region do not have permanent defense treaties with the United States, and they traditionally have been suspicious of the stationing of any foreign forces on their territory. Although Saudi Arabia, the United Arab Emirates, Bahrain, Qatar, Oman, and especially Kuwait desire a continuing and strong defense relationship with the United States, political and cultural concerns associated with Islamic fundamentalism dampen their overt support for anything that might appear to indicate a permanent U.S.—or other non-Muslim—presence. Presumably, the end of the UN sanctions or the replacement of the Saddam Hussein regime by another Iraqi government might lead to a

regional desire for reductions in U.S. land-based presence, but this impulse might be mitigated by concerns about potential aggression by Iran.

Another element that shadows the regional view of U.S. presence is long-term American support for Israel. In the wake of the Mideast peace process and the Gulf War, this shadow is not as big as it was in the 1970s and 1980s. However, the continuing potential for Arab-Israeli conflict and the unrest of the Palestinians often are used as premises for unofficial (and sometimes official) anti-U.S. presence sentiment.

The bottom line is that a clear and evident requirement—deterring Saddam Hussein or a potentially aggressive Iran—exists for the U.S. presence in the region. Ongoing operations include patrol of the two no-fly zones by coalition air forces. Preventing genocidal acts against minority populations such as the Kurds and deterring the proliferation of WMD are justifications for a reassuring U.S. presence, as is protection of the flow of oil from the Gulf region. However, political limits on the size of that presence constrain and channel CENTCOM planning for the possibility of a major theater war.

U.S. Interests

Perhaps the best way to assess the current and future requirement for a U.S. military presence in the region is to determine what the long-term U.S. interests are. The Secretary of Defense has identified U.S. interests in terms of "peace, where access to strategic natural resources at stable prices is unhindered and free markets are expanding."[4] Historically, American interests in the region have revolved around trade. Such interests predate the discovery of Middle East oil, but the dominance of the British Empire in the Gulf region limited American commercial involvement until after the Second World War. The British decision to withdraw all military forces from east of Aden in the early 1970s effectively ceded outside support for Arabian Gulf security to the United States.

The prospect of a permanent peace between Arabs and Israelis, curtailing threats to regional security by Iraq and Iran, and deterring proliferation or use of WMD appear to be necessary components for Gulf security. Achieving these goals also would eliminate much of the near-term threat to access. However, the flow of oil and transit through the Strait of Hormuz (and the Suez Canal) would remain an American strategic interest. Securing this interest would require a long-term (primarily maritime) presence that would closely resemble the U.S. regional presence before Operation *Desert Shield/Desert Storm.*

Promoting democratic governance often is cited as a significant element of the engagement activities of U.S. military forces overseas. But some inherent contradictions exist in this mission for CENTCOM, particularly in the Arabian Gulf, which does not have a tradition of democracy. Indeed, most U.S. allies in the region cannot be considered parliamentary democracies, although the degree of popular participation in government varies from state to state. Having democracy become firmly rooted in states throughout the Middle East may be a long-term U.S. and global interest, but the short-term result might be a regional instability that allows demagogues and populist dictators to overthrow the more moderate existing regimes. This possibility makes the near-term goals of U.S. presence in the region much narrower than its goals in Europe and East Asia.

Challenges and Implications

Barring heightened fears prompted by an act of overt aggression, regional leaders appear to have no incentive to ask for any increase in U.S. military presence. Likewise, because rotational naval forces operating in international waters or temporarily deployed air or land forces conduct much of the presence mission, no direct incentive exists to call for a reduction in U.S. regional presence. Fundamentalist anti-presence sentiment is focused against land-basing of what are viewed as "crusader" forces, implying that the presence of Western troops in the 21st century somehow is analogous to occupation of the Holy Land by Christian knights during the Middle Ages. Traditional enmities, even those that defy Western logic, remain.

However, changes in the nature of the potential threats within the region, notably the development of longer-range ballistic missiles potentially armed with WMD, may require changes in the form of U.S. presence posture. The development of antiaccess systems, including Iranian interest in acquiring antiship missiles and mines and developing a viable submarine force, appears to increase the range of potential threats to maritime forces. The October 2000 terrorist attack on USS *Cole* in Aden harbor in Yemen has renewed public concerns about the adequacy of force protection for U.S. military personnel in the region.

All these developments suggest an increasing regional requirement for TMD, chemical and biological detection defense systems, and improved methods of force protection. Although host-nation militaries could undertake certain of these improvements, many of them would need to be provided by U.S. forces. Without an increase in the number of

presence forces, this shift could require a change in their mix, substituting force protection units for other combat forces.

Another option would be an increase in naval presence, particularly proposed TMD-capable surface ships, or a focus on amphibious capability in lieu of land-based ground forces. Alternatively, increases in long-range strike systems stationed just outside the region (such as at Diego Garcia) could replace the emphasis on presence. However, a concurrent reduction in visible regional presence might have a very severe and deleterious political effect, eroding both deterrence and regional support for American interests.

Paradoxically, increasing force protection might reduce the regional engagement that U.S. presence forces currently conduct. The attack on USS *Cole* prompted questions about the need for U.S. military engagement with Yemen, a state not known for political stability or support for Western interests. Another issue has been the potential disparity between enhanced protection for the Armed Forces in the event of a WMD threat and the minimal or nonexistent protection afforded to the populations of the host nations by their own governments. One concern is the destruction of the host-nation support personnel and infrastructure needed for the entry of follow-on power projection forces. This concern could tilt the focus from force protection toward civilian population protection, which would necessitate some changes in the types of presence forces stationed in the region.

Such issues point to the complexity of maintaining a presence in a region where it is seen as but a temporary solution to current conditions. U.S. interests in the Middle East would appear to continue to revolve around resources and free markets. Although presence supports the stability of current governments in the region, it also attracts the ire of Muslim fundamentalists. This imbalance renders quite uncertain the long-range prospects of a contribution by a permanent land-based presence to democratic engagement and enlargement, previously a continuing goal of U.S. foreign policy.

Asia-Pacific Region

U.S. military presence in the Asia-Pacific region is largely the legacy of two half-century-ago wars: World War II and the Korean War.[5] As a result of these wars, the United States established and has maintained substantial forces in South Korea and Japan. Throughout the Cold War, these forces helped deter not only North Korean but also Soviet aggression in

Northeast Asia. With the collapse of the Soviet Union, these forces continue to serve as a deterrent to North Korean aggression. However, the regional security paradigm is changing. Although predictions of the imminent demise of the Democratic People's Republic of Korea have proven to be exaggerations, the country's long-term viability remains questionable, and a fundamental change in the security equation on the Korean Peninsula is likely to occur within the next decade. Meanwhile, Chinese military capabilities are steadily increasing, with no sign that Beijing intends to give up its authoritarian system of government or its threats to use force against Taiwan under certain circumstances. In South Asia, both India and Pakistan have tested nuclear weapons, raising the specter of nuclear war on the subcontinent.

These changes to the Asian security environment offer the United States an appropriate time to reassess its security posture in the region and consider what changes it ought to undertake. If major changes to U.S. posture are needed, time will be required to build the necessary political consensus and then to implement the changes. The movements in the Asia-Pacific region may appear to be occurring at the pace of continental drift, but as the tectonic plates of the security environment grind past each other, they could suddenly slip—fundamentally altering the landscape before the United States has prepared adequately for change.

U.S. Interests

To secure its fundamental interests of maintaining the territorial, political, and social integrity of the United States, ensuring the lives and safety of its people, and promoting the prosperity of the Nation and its people, the United States pursues a number of specific goals. These include preventing the emergence of a hostile power capable of threatening these fundamental interests, deterring aggression against U.S. friends and allies, promoting the growth of democracy throughout the world, ensuring U.S. economic access to important markets, commodities, and trading partners, and preventing the spread of dangerous military technologies. In the Asia-Pacific region, only three countries appear to have the potential to rival the military capabilities of the United States in the next 50 years: China, Japan, and India. At present, none of these countries is overtly hostile to U.S. interests—although Japan is the most friendly and China the least—and none of them possesses anything comparable to U.S. military capabilities. The goal for the United States with regard to these three countries, therefore, is twofold: ensuring that they remain friendly to the United States, and ensuring that they do not develop military capabilities

that could challenge those of the United States. The more certain the United States is of the friendliness of a nation, the more willing it is to accept the possession of significant military capabilities by that nation.

The United States has formal military alliances with Australia, Japan, the Philippines, South Korea, and Thailand. The United States has a more ambiguous security commitment to Taiwan, as embodied in the 1979 Taiwan Relations Act. The United States has a security relationship with Singapore that includes a small, permanent military presence there, which brings with it an implied interest in Singapore's security. America also enjoys friendly relations with a number of other countries in the region and would not like to see their sovereignty or independence threatened by a country hostile to the United States.

Democratization is an ongoing trend in the Asia-Pacific region; South Korea, Taiwan, and the Philippines have enjoyed democratic transitions in the last 15 years, and other states also are taking steps in the direction of democracy. Many countries still are not fully democratic, however, and some, such as China, Vietnam, and Burma, remain authoritarian dictatorships. The continuation of the democratic systems in those states that are already democracies, and the democratization of those that are not, particularly China, are important U.S. interests in the region. Fortunately, two of the three states with the potential to become major military powers—Japan and India—already are full-fledged democracies.

Although the United States remains dissatisfied with its access to the markets of many countries in the region, particularly China and Japan, the Asia-Pacific region is a vital trading partner of the United States, with transpacific trade well exceeding transatlantic trade. American companies also have more than $100 billion invested in the region. Any attempt to create an exclusionary trading bloc that denied economic access to important U.S. trading partners in the region (particularly Japan, China, South Korea, or Taiwan), or actions that imperiled the economies of major trading partners, would threaten the vital national interests.

The spread of dangerous military technologies also is a concern in the Asia-Pacific region. Several countries (China, India, Pakistan, and possibly North Korea) already possess nuclear weapons. Some of these countries are attempting to increase their arsenals, and other states may be attempting to acquire nuclear weapons as well. A number of regional states are suspected of possessing chemical or biological weapons, and several (China, India, North Korea, and Pakistan) are upgrading their ballistic and cruise missile capabilities. These technologies in the hands of some

countries, such as India, are not a direct threat to the United States, but the more countries that possess them, the greater the likelihood that they will spread to countries that are a direct threat to the United States. China and North Korea, in particular, indiscriminately will transfer nuclear and missile technology to any country willing to pay for it, and the mere demonstration effect of India and Pakistan acquiring nuclear weapons may encourage other countries to pursue them as well. Moreover, the actual use of a nuclear weapon in war would break the nuclear taboo that has been in effect in 1945, increasing the likelihood of subsequent use—a development that clearly would counter the interests of the United States (or almost any other country). The United States, therefore, has a strong interest in preventing the further spread or development of nuclear, biological, chemical, and missile technology in the Asia-Pacific region.

Potential Challenges

The most prominent of several possible developments that could threaten U.S. regional interests remains conflict on the Korean Peninsula. The possibility that North Korea could launch an attack on South Korea—perhaps as an attempt by Pyongyang to maintain its hold on power by creating a national emergency—remains real, if apparently remote. A more likely scenario would be the collapse of the North Korean state, which probably would result in the intervention of South Korean and American forces to restore order. If China also intervened (perhaps because of refugee flows into Manchuria), the danger of conflict between China and the United States or South Korea would arise. The United States already is well positioned to deal with any contingencies on the Korean Peninsula, however, and none of these scenarios seem to require a change in U.S. force posture.

The possibility of a Chinese attack on Taiwan is of increasing concern. Although Beijing seems to have come to terms temporarily with the Taiwanese election of a president from the pro-independence Democratic Progressive Party, China has not given up its claim to the island and continues to assert its right to use force to recover it. Considering current Chinese military capabilities, which are unlikely to change significantly in the immediate future, any attempt to invade the island almost certainly would fail. Nonetheless, evidence indicates that Beijing hopes to force a resolution of the Taiwan issue by the year 2005 or so. If attempts at peaceful persuasion fail, some form of coercion using air and missile attacks or a naval blockade would be more likely than an outright invasion.

China also could attempt to use military means to enforce its claims to the islands of the South China Sea. So far China has adopted a patient approach in resolving these disputes, but it could come into conflict over the islands with Vietnam, the Philippines, Malaysia, or Taiwan. Rather than an outright attempt by one country to evict another from an island it occupies, the most likely scenario is a clash at sea. Such a conflict might occur as a result of countries attempting to enforce claims to territorial waters or of one country attempting to prevent another from landing on an unoccupied island (such as Fiery Cross Reef in 1988) or reinforcing an existing garrison. Conflict among claimants other than China, although less likely, also is a possibility. The use of force against an ally such as the Philippines would be a threat to national interests, and even if a U.S. ally were not involved, naval conflict in the South China Sea could disrupt shipping through some of the world's most important shipping routes.

Nuclear war between India and Pakistan would be detrimental to U.S. interests as well. Although neither country is an ally or important economic partner of the United States, nuclear war would be a huge humanitarian and environmental catastrophe. More significantly from a strategic perspective, the demonstration effect of the use of nuclear weapons and the breaking of the nuclear taboo could increase the likelihood that other countries that already possess nuclear weapons might also use them. Likewise, states that do not already possess nuclear weapons could be encouraged to seek to acquire them.

Other interstate conflicts in the region are conceivable, although less likely. Developments other than interstate conflict also could be detrimental to national interests. An attempt by a regional power such as China to dominate part or all of the region politically would be one example. Such action could weaken American influence over its allies and friends in the region, thus undermining overall U.S. power and security while augmenting the power and influence of a country that could threaten the United States. Regional domination accompanied by trading policies that discriminated against the United States would threaten U.S. economic interests as well.

Any weakening of the U.S.-Japan alliance would be a serious concern for America. A Japan that no longer enjoyed a close security relationship with the United States would be likely to increase its military capabilities in order to protect its interests in the region. This buildup, in turn, might cause other countries—such as China or Korea—to feel threatened and to bolster their own military capabilities in response. A weakening of the

U.S.-Japan alliance probably would increase pressure for the United States to withdraw its forces currently stationed in Japan, reducing U.S. ability to project power and influence in the region. None of the overall results—a Japan no longer closely aligned with the United States and that had turned its formidable economic and technological capabilities to the development of military power, an increase in the military capabilities in other countries in the region, and a reduction of U.S. military capability in the region—would be in U.S. interests.

Related to this issue is the question of the U.S. role in Korea and Japan subsequent to a resolution of the Korean problem. Because the presence of U.S. forces in both Korea and Japan is justified primarily in terms of potential contingencies on the Korean Peninsula, popular sentiment in Korea, and possibly Japan as well, probably would strongly favor the removal of U.S. forces if the threat of war on the Korean Peninsula dissipated. The result of such a withdrawal, however, would be a Korea left alone between two major regional powers, China and Japan. Such circumstances might compel Korea to increase its military capabilities, which could cause Japan to feel uneasy (particularly if the ending of the potential Korean conflict also resulted in a withdrawal of U.S. forces from Japan) and to build up its own military capabilities. In turn, China could perceive this move as threatening, with the net result being a region significantly more militarized than at present, and a weakened U.S. relationship with its two most powerful allies in the region. Preventing such an outcome, therefore, is an important U.S. interest.

Another development for which the United States must be prepared is the failure of an important state in the region. The breakup of China no longer appears plausible, but it still cannot be ruled out with complete certainty, while the long-term viability of countries such as Pakistan, Indonesia, and North Korea remains open to question. A Pakistani collapse would have repercussions throughout South and Southwest Asia. Factional conflict within and between the resultant pieces of the Pakistani state would be likely and could involve intervention by India from the east or Iran from the west. Control over Pakistani nuclear weapons would be a serious concern, with a high risk that they might fall into the hands of a state or nonstate actor hostile to the United States.

An Indonesian collapse would be detrimental to U.S. interests in the region. In addition to the humanitarian disaster it would represent, there also would be a danger of sectarian conflict spreading to other countries

in the region (primarily the Philippines, Singapore, and Malaysia), massive refugee flows, and increased piracy and disruptions of commerce.

A final candidate for collapse is North Korea. Although, as with China, this no longer seems as likely as it did a few years ago, it still cannot be ruled out. Most of the resulting refugees undoubtedly would attempt to migrate south, but some would also flee toward China, particularly if they were thwarted in their efforts to reach South Korea. This might cause China to intervene in North Korea to restore order. South Korea would likely attempt to enter the North as well. Since a North Korean collapse probably would result from paralysis of the Pyongyang government, perhaps because of or accompanied by a coup attempt or civil war, the risk of conflict between some combination of South Korean, North Korean, and Chinese forces would be high. The situation would be further complicated by the existence of North Korean NBC weapons.

Developments in military technology also can pose challenges to U.S. interests in the region. The most significant of these are the increasing numbers, range, and accuracy of ballistic and cruise missiles. In the post-Cold War era, the United States has become accustomed to enjoying invulnerability in its rear areas during regional conflicts. This security would not necessarily be the case in the event of conflict in the Asia-Pacific region. China, North Korea, India, and Pakistan all possess ballistic missiles, and China is developing cruise missiles as well. China has long possessed nuclear-armed ICBMs capable of reaching the continental United States, but the existence of conventional missiles capable of striking U.S. airbases and other rear-area targets represents a new challenge to conducting military operations in the region.

Implications for U.S. Military Posture

The United States is well postured to respond to the most likely immediate challenges on the Korean Peninsula: inter-Korean conflict or a North Korean collapse. However, it must also prepare for the eventuality of a resolution of the Korean problem, which might result in strong popular pressure for the removal of all U.S. forces. As a complete American withdrawal from Korea would not be in the interest of either the United States or the Republic of Korea, the United States should seek ways to ensure that it could maintain forces on the peninsula even after the Korean problem was resolved. This could well entail a significant reduction in troop numbers along with their reassignment to less intrusive locations, as well as a skillful public relations campaign to persuade the Korean people of the value of a continued U.S. military presence.

A similar argument applies to U.S. military presence in Japan. Resolution of the Korean problem undoubtedly would increase the pressure for a reduction in or removal of U.S. forces from Japan, but such sentiments are already growing. To counter this trend, the United States must seek ways to revitalize the U.S.-Japan alliance. Most fundamentally, this requires treating Japan as an equal partner in the relationship. Although allowing Japan to move beyond a subordinate role in the relationship might risk having it question the continued need for U.S. military presence, perpetuating the current unequal relationship ensures that the issue will one day explode. As in the case of a post-resolution Korea, the United States must be prepared to contemplate reductions in its presence in Japan.

However, certain U.S. facilities in Japan will remain critical to U.S. ability to project power and influence in the region even after the danger of inter-Korean conflict has ended and should be retained if possible. The naval facilities at Yokosuka and airbases at Kadena play particularly vital roles. If United States were no longer able to base an aircraft carrier in Japan (or somewhere in East Asia), U.S. carrier presence throughout the world would be reduced. Additional carriers would be needed even to maintain a partial presence in East Asia, but increasing the total Navy complement of aircraft carriers beyond the current 12 would be very costly.[6]

The airbase at Kadena also is vital to U.S. security because it is the only U.S. airbase within tactical fighter range of Taiwan. Without access to Kadena, the United States would be forced to rely primarily on carrier-based aviation to support defense of Taiwan in the event of a Chinese attack. (Aircraft also could reach Taiwan from Guam and other distant bases, but at the cost of a vastly reduced sortie rate and substantially increased requirements for refueling aircraft.) The airbases at Misawa on mainland Japan are less vital but still are important because of the role they play in facilitating the movement of tactical aircraft from the United States to Asia. Short-range aircraft flying out of bases in Alaska are met over the northern Pacific by refueling aircraft based at Misawa, which enables them to reach Japan. From Japan, the aircraft can, with additional ground or air refuelings, continue on to contingencies throughout Asia.

The Marine Corps maintains extensive facilities in Japan, primarily in Okinawa but also in mainland Japan. Replacing these facilities would be extremely costly, and whether another home could be found for III Marine Expeditionary Force (MEF) elsewhere in East Asia is questionable. Nonetheless, the inherent mobility of the Marines means that there is no

absolute requirement for them to be located in Japan, particularly if they were no longer needed for a Korean contingency. If a reduction in U.S. forces in Japan resulted in the relocation of III MEF to Hawaii or the west coast of the United States, aside from the considerable cost of constructing facilities to accommodate them, the primary operational impact would be a several-day increase in the time required for them to deploy to a contingency in Asia. Thus, although valuable, the Marine Corps presence in Japan is not as vital as the basing of an aircraft carrier at Yokosuka and having an airbase at Kadena. If a reduction in U.S. military presence in Japan were necessary, the Marine Corps facilities in Okinawa and the Air Force base at Yokota probably are the least vital of major American installations in the country and therefore the most likely candidates for reduction. Reductions alone, however, will not ensure the sustainability of military presence in Japan and could simply encourage attempts to eliminate all American bases in Japan. Reductions should occur only in the context of a restructuring of the U.S.-Japan security relationship aimed at ensuring the long-term viability of the alliance.

Other than in South Korea and Japan, U.S. military presence in the region is sparse, particularly in South and Southeast Asia. The U.S. military periodically exercises with the militaries of nations in this region, and Navy ships transit the region and conduct port calls and exercises. In addition, Singapore and Australia have allowed the Navy and Air Force to maintain liaison offices in their territory. The Air Force regularly deploys aircraft to Singapore for training purposes, and Singapore has built a pier capable of accommodating visiting nuclear aircraft carriers. The Air Force and Marine Corps periodically use training areas in Australia, and the Navy conducts exercises offshore. The United States maintains naval and air facilities on Guam in the western Pacific and on Diego Garcia in the Indian Ocean.

The United States should seek ways to increase its military presence in other countries in South and Southeast Asia. This presence should not, however, necessarily come in the form of large sovereign bases such as those the United States maintains in South Korea and Japan (and as it formerly did in the Philippines). In an era of constrained defense budgets and the absence of an unambiguous threat, justifying the expense would be difficult. Moreover, countries in the region are unlikely to allow the United States to establish new permanent bases on their territory. Almost all significant overseas U.S. bases were established in the aftermath of a major war. In the absence of such a war or an immediate threat, countries

will have little motivation to bear the political costs associated with a perceived compromise of national sovereignty.

Instead, the United States should seek to extend to other countries in the region the type of arrangement it has with Singapore—a small permanent liaison staff and regular temporary training deployments by larger combat units to facilities owned and operated by the host country. Regular deployments of land-based forces to these countries would provide an opportunity to train in a variety of regional environments, facilitate interoperability with allies and potential coalition partners, and deter regional aggression. They also would increase the logistical and political ability of the United States to operate out of those countries in a contingency, whether interstate war or humanitarian crisis. The Armed Forces already have considerable naval access and some land-based access to Australia, but current arrangements should be further expanded, if possible, to make use of the excellent training areas available in that country. The United States also should seek to expand its presence on the territory of its other regional allies, the Philippines and Thailand. Given its former colonial relationship with the Philippines, the United States must be sensitive to the delicacy of the issue there and not attempt to acquire greater access than is acceptable to the Philippine people. Nonetheless, given the strategic location of the Philippines, particularly relative to the South China Sea, and the continuing U.S. alliance relationship with it, both countries would benefit if America had an increased ability to train with Philippine forces and operate out of Philippine bases. A similar argument applies to Thailand, which occupies a strategic location as the only U.S. ally in mainland Southeast Asia. Where possible, comparable arrangements should be made elsewhere in South and Southeast Asia—perhaps India, Indonesia, Malaysia, and even Vietnam.

Finally, the United States should consider upgrading its facilities on Diego Garcia and Guam. The United States has major air and naval facilities at Guam, but they are underutilized and have fallen into disrepair, and the facilities at Diego Garcia are limited. Both islands occupy strategically similar locations within their respective regions, being at least several hundred miles from the Asian mainland. This location limits the ability of tactical aircraft to operate from bases there but has the advantage of being out of range of most missiles possessed by countries in the region. Thus, long-range aircraft and naval forces could operate out of bases on these islands in relative safety. Guam has the advantage of being roughly equidistant between Northeast Asia, Taiwan, and Southeast Asia,

while Diego Garcia is the only U.S. military facility in South Asia (although the United States does have access to some facilities in the Arabian Gulf). Refurbishing the air and naval facilities in Guam would enable U.S. forces to operate more effectively from there in event of a crisis in East Asia, and expanding the facilities at Diego Garcia would increase the ability of U.S. forces to respond to a crisis—humanitarian or otherwise—in South Asia.[7]

Opportunities for Change

Overseas military presence is a fundamental requirement for any defense strategy based primarily on power projection, and QDR 2001 is unlikely to challenge the concept of a robust U.S. overseas presence. However, the type of presence and the nature of the forces stationed overseas logically will be significant QDR issues.

The potential for some change already is building. The shift of the Air Force toward a rotational Air Expeditionary Force (AEF) concept, along with the inherent sovereignty and force protection characteristics of naval-forward presence, might prompt a move toward a more maritime-based presence backed by greater deployment of longer-range strike forces stationed just outside or on the well-protected fringes of the region. This model may be a good one for the Arabian Gulf region, where any increase in land-based presence would seem problematic politically. It also could be a solution to some Pacific region presence issues. But it would help little with potential conflicts in the former Soviet republics of Central Asia, where the United States currently has no presence forces; it would not increase the interoperability of ground forces in areas such as South and Southeast Asia; and it would not be sufficient for broader NATO activities in the Balkans or elsewhere.

The United States maintains a very real and abiding interest in European security affairs. Forces in Europe perform numerous important missions to ensure that the United States can achieve its foreign policy objectives in that region. The needs of the European theater deserve to be given careful and thorough consideration in light of the essential role played daily by Americans stationed there. The Soviet Union is a thing of the past, but the need to maintain a strong and capable U.S. military presence in Europe is very much an obligation of the present and future. This presence should, however, consist primarily of lighter forces with greater mobility than the Cold War remnants currently in place.

In a resource-constrained environment, reshaping U.S. forces in Europe will not be easy, but the upcoming QDR provides an ideal opportunity for DOD to consider these issues in the context of global U.S. overseas presence. In some cases, changes could be pursued through ongoing transformation initiatives, such as the Army transformation plan and the AEF concept. However, attempting to adapt U.S. forces in Europe solely through a series of existing efforts that are not tightly integrated risks generating a force structure in Europe that, even if it is better suited than the Cold War remnants, will fall short of a solid solution. The QDR 2001 provides a needed opportunity to examine the requirements of the European theater across the board and to assess how those needs compare to those of other theaters.

U.S. presence in the Arabian Gulf region should balance long-term American interests with current political conditions, in which a rogue regime continues to defy collective world concerns about the development of weapons of mass destruction and the potential for cross-border aggression. An additional factor is that the operational U.S. presence tied to the Northern and Southern no-fly zones imposed on Iraq ultimately have a UN mandate and are not part of a permanent regional agreement. A maritime-oriented presence—legitimated by the legal freedom of the seas—may be optimal for long-term U.S. interests in free trade and the flow of natural resources, but some degree of land-based presence still appears essential in helping to constrain current threats. Because of the narrow physical confines of the region, notably the Strait of Hormuz, the development of antiaccess weapons and strategies may have even more of an immediate impact on regional presence decisions than changes in political conditions. Current political conditions may make it difficult for QDR 2001 to advocate any fundamental change in the size of presence forces in the region, although a force mix tilted toward counterproliferation and force protection could be a logical recommendation.

The Asia-Pacific security environment is evolving, and U.S. presence in the region must evolve as well. The Cold War has ended, and the Korean confrontation appears to be winding down, while Chinese power and reach are growing. The risk of conflict in the South China Sea appears to be increasing, as are the danger of war in South Asia and the chances of state failure in South, Southeast, and Northeast Asia. The United States must ensure that it has adequately prepared the way for the type of presence it needs to maintain in Northeast Asia when the Korean confrontation has ended. This includes considerations of stability and

reassurance for Japan, China, and Korea, and also of U.S. ability to maintain its presence and to project power throughout the region. The United States must expand its presence in South and Southeast Asia, not through the establishment of new sovereign bases but through access arrangements that allow it to deploy forces regularly to countries in these subregions without compromising their sovereignty. The current defense relationship with Singapore may provide a suitable model. The United States also should upgrade its facilities in Guam and Diego Garcia. The range of missiles possessed by potentially hostile countries is increasing, and the likelihood of regional crises is increasing. The United States needs bases that are well away from the mainland but close enough to support operations in response to those crises. Fundamental shifts gradually are taking place in the regional security landscape; to protect and advance its interests in the region, the United States must adapt its overseas presence in anticipation of, rather than in reaction to, these shifts.

The QDR will allow DOD to take stock of its entire defense strategy and what it requires in the context of likely available resources. A decision in the next QDR to depart from the two-major theater war requirement clearly would have implications for what might be available for overseas presence. These implications must be well understood before any decisions are made concerning what to do with those very visible pieces of U.S. force structure.

In the absence of a change in the requirements needed to implement the strategy and without significant additional resources for defense, the only way to make the kinds of changes outlined here will be to make tradeoffs among force structures in various theaters. Only by carefully and objectively assessing the needs of one theater against another during QDR 2001 can sound decisions be reached about whether these types of changes would be beneficial to achieving U.S. objectives without jeopardizing achievement of U.S. foreign policy objectives as a whole.

Notes

[1] This does not include the wars fought against domestic opponents, notably the American Civil War and numerous wars against the Native American tribes. There have also been casualties inflicted on American soil as part of foreign wars (such as at Pearl Harbor); however, no major land battles were conducted in the continental United States.

[2] Power projection is defined as "the ability of a nation . . . to rapidly and effectively deploy and sustain forces in and from multiple dispersed locations to respond to crises, to contribute to deterrence, and to enhance regional stability." From Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms,* at <www.dtic.mil/doctrine/jel/doddict/>.

[3] Another method of categorizing overseas presence forces—one used in recent reports of the Secretary of Defense—is by their degree of permanence. In this construct, overseas presence forces can be categorized as (1) permanently stationed, (2) rotationally deployed, and (3) deployed temporarily for exercises, combined training, or military-to-military interactions. See Secretary of Defense William S. Cohen, *Annual Report to the President and Congress 2000*, 4.

[4] Cohen, *Annual Report to the President and Congress 2000*, 11–12.

[5] For purposes of this section, the Asia-Pacific region is taken to be roughly equivalent to the land portion of U.S. Pacific Command area of responsibility. It includes South Asia (from Pakistan eastward), East Asia, and Southeast Asia.

[6] In addition to the naval facilities at Yokosuka, an air base is needed nearby to support the aircraft carrier's air wing. Atsugi Naval Air Field serves that purpose now, but the field has environmental and safety problems. If the Marine Corps air wing stationed at Marine Corps Air Station Wakuni or U.S. Air Force units stationed at Yokota were withdrawn, the aircraft carrier air wing could be relocated to either of those facilities.

[7] Diego Garcia is British territory leased to the United States for a finite period. The British government currently is facing claims to the land by the descendants of its former residents, Maldive Islanders who were brought to Diego Garcia to work on the copra plantations there. These issues would have to be resolved before the United States invested in a significant expansion of its facilities on Diego Garcia.

Chapter Nine

The Future of U.S. Overseas Presence

by Roger Cliff, Sam J. Tangredi, and Christine E. Wormuth

Blessed by favorable geography, sound defense policies, and a propitious history, the United States has not had to fight a major war on American soil against a foreign power for over 187 years.[1] Instead, it has been involved in conflicts ranging from smaller-scale contingencies to global wars that have taken place in international seas and airspace or on the territory of allies or opponents. Considering the physical devastation that war can bring—to say nothing of the military and civilian casualties—the fact that conflicts have been conducted away from the U.S. homeland can be considered one of the more fortunate aspects of the American experience.

But this did not occur by grace alone. For much of its existence, the United States has maintained an overseas military presence in an effort to prevent hostilities from reaching North America. For this reason—and in response to American involvement in conflicts overseas, most notably the Second World War—the contemporary U.S. military has been structured primarily as a power-projection force.[2]

However, projecting power into a distant theater without military forces already in place to slow the enemy advance, and protecting the infrastructure required to receive the incoming friendly forces and the forces themselves until they can establish their own defenses, are extremely difficult.

Moreover, the actual deterrent effect of a robust power-projection capability never has been particularly clear. During the Cold War, the United States stationed a considerable share of its active-duty forces overseas to act as both the means of facilitating the arrival of U.S. power-projection forces and as a deterrent to the actual outbreak of conflict. U.S. forces were stationed at the Fulda Gap in Germany and in other places in Europe and in Turkey to be able to respond immediately to a Warsaw Pact attack and

to buy time for the mobilization of other NATO forces and the projection of forces from the continental United States. They also were intended to be a deterrent to war in the event of an expanding crisis. U.S. forces stationed in Asia, notably Japan and Korea, also served as a deterrent to possible crises or, as in the case of Korea, more immediate ones.

The forward positioning of naval forces within regions of potential crisis has been a U.S. policy since long before the Cold War. This naval version of overseas presence, independently known as naval presence or forward presence, has been an integral part of American diplomacy and has functioned to protect American access to foreign trade. During the Cold War, the deterrent element of naval forward presence was emphasized. A key difference is that naval forces operating at sea effectively are sovereign U.S. territory under the law of the sea, while the stationing of land-based forces overseas is subject to the desires of the host nation and is governed by bilateral or multilateral agreements.[3]

With the end of the Cold War, some have questioned the need to station extensive U.S. forces overseas, particularly the land-based forces whose status-of-forces agreements require periodic renewal—a procedure that sometimes involves contentious diplomatic effort. Removing U.S. forces from overseas locations sometimes is seen as a potential cost savings; however, given the financial and material support that overseas forces receive from several key host-nation allies, this belief may be false. At the same time that the end of the Cold War may have called the policy into question, the United States has taken on an additional overseas presence commitment by stationing forces in the Arabian Gulf region in the wake of Operation *Desert Storm*. Such U.S. forces are meant to deter renewed aggression by Iraq or potential action by Iran, and to maintain the United Nations (UN) sanctions regime against Saddam Hussein.

The U.S. overseas presence force posture will be examined as a part of the Quadrennial Defense Review in 2001. This chapter examines the policies and issues of the stationing of U.S. forces in three particular regions: Europe, the Pacific, and the Arabian Gulf. The primary purpose is to identify options for the Bush administration to consider when crafting the overseas presence portion of its defense policy. The sections that follow describe—for each of the three regions—the current U.S. posture, emerging regional missions for the presence forces, the potential mismatches of posture and policy that have developed in the past decade, and the possible political impact of changes to the current force posture.

Europe

At the height of the Cold War, U.S. forces in Europe numbered close to 325,000. Stationed mainly in the United Kingdom, Germany, and Italy, these forces served two major purposes. First, American forces on European soil were a physical symbol of the U.S. commitment to the security of Europe. Second, had a war with the Soviet Union broken out, these forces were the first line of defense. With the dissolution of the Warsaw Pact and later the Soviet Union itself, the rationale for maintaining Cold War force levels in Europe no longer existed. DOD began reviewing force levels in Europe in 1991 and then began the largest drawdown of active-duty forces from Europe since permanently stationing troops there in the late 1940s.

U.S. Interests

In addition to the continuing U.S. commitment to NATO, economic, political, and cultural ties to Europe remain strong—and are perhaps the strongest in the global community. Trade between the United States and European nations totals over $1 billion daily. Europe shares American democratic political and social values and is its strongest military and diplomatic partner in working to strengthen the international community. At the same time, the experience of two global wars with origins in European conflicts makes the commitment to supporting peace in Europe a foundation of U.S. foreign policy. Much has changed since the collapse of the Soviet Union, but a stable and secure Europe remains important to the United States. Therefore, the United States will remain seriously engaged in European affairs, and the Armed Forces will be an important tool in the transatlantic relationship.

About 100,000 military personnel remain permanently stationed in Europe. The majority of them are members of elements of larger units that were stationed there during the Cold War. Although most U.S. forces in Europe are still stationed at Cold War-era bases, the missions that these forces perform have changed in nature and increased in number since the fall of the Berlin Wall. Using a force posture that was designed to meet outdated needs has created what some consider a mismatch between requirements and forces. Tempo challenges and difficulties associated with SSC operations such as the Stabilization Force (SFOR) in Bosnia and Operation *Allied Force* in Kosovo are, at least in part, manifestations of the strains thus generated.

In the last 5 years, forces under the Commander in Chief, Europe Command, have conducted nine noncombatant operations, patrols of three no-fly zones, two major humanitarian assistance operations, nine peace enforcement operations, and two major coercive air campaigns. These forces also have conducted innumerable exercises with NATO allies and partners, military-to-military contact programs, training and education programs, and other engagement activities. As they were during the Cold War, most of these forces are stationed in Britain, Germany, and Italy. In addition to permanently stationed forces, the Navy and Marine Corps are regularly deployed to the European theater, and the headquarters of the U.S. Sixth Fleet is located in the Mediterranean. The United States also has maintained forces on the ground in Bosnia and Hungary, since 1995. U.S. European Command (EUCOM), headquartered in Stuttgart, and the forces assigned to it are responsible for monitoring and responding to events in all of Europe, including many of the former Soviet republics, as well as countries in North Africa and the sub-Saharan region. U.S. military personnel in Europe today are busier than ever before, and although they have done an admirable job advancing U.S. objectives in Europe, the United States would be better served by a force posture designed specifically to address the existing and likely future security environment in that region.

Potential Challenges

The former Soviet Union no longer dominates the threat scenario for Europe, but it will present challenges and risks for the United States and its NATO allies for at least the next 10 years. The evolution of Russia and its relationship with the Alliance, efforts by NATO to adapt to the new strategic environment, continuing instability in the Balkans, and the growing threat posed by the proliferation of NBC weapons dominate the security environment in Europe.

Russia no longer poses a major threat to the stability of Europe, although its uneven and unpredictable evolution toward free markets and democracy will affect the broader security environment for Europe. The United States and its allies must be concerned about the potential spread of NBC weapons and expertise from Russia and the other newly independent states that emerged from the end of the Cold War.

Although NATO also has changed since 1991 to meet new realities in Europe, it remains the preeminent security mechanism for the continent. The Defense Capabilities Initiative (DCI), launched in 1999 to strengthen allied military capabilities, and efforts to reinvigorate the European Security

and Defense Identity (ESDI) may further strengthen NATO ability to address European security challenges. The Alliance is likely to invite additional countries to join it in the next several years. NATO also will continue broadening its focus beyond member territory to address instability in southern Europe and threats posed by the proliferation of NBC weapons and ballistic missiles in North African and the Middle East, and perhaps ultimately to deal with broader interests in the Persian Gulf area.

Many aspects of the current and future security environment in Europe are reasonably clear, but certain key variables will have a major impact on European security and the U.S. strategy toward Europe in the future. The future of Russia is the primary unknown with critical implications for Europe and the United States. The United States and its European allies and friends will be monitoring developments in Russia very carefully, trying to strike a balance between assisting the Russian transformation wherever possible and maintaining a clear-eyed perspective on its long-term strategic orientation. Whether the DCI and ESDI efforts are successful also may affect U.S.-European relations significantly. If the Europeans succeed in improving their military capabilities, the nature of U.S.-European roles in NATO may evolve considerably.

The deployment of a national missile defense would have profound implications for European security. Many European nations argue that an NMD system would fundamentally undermine the Western relationship with Russia, particularly if the United States were to abrogate the Anti-Ballistic Missile Treaty to deploy the system. Europeans also fear that the system could increase instability in regions such as Asia and could create different zones of security in NATO in which some nations are more secure than others. Unless all allied nations were to move from shared vulnerability to shared invulnerability under a NATO-wide missile defense system, many Europeans fear that the European members of the Alliance could become detached from the United States. Finally, even if these European members were unanimous on the need for an NMD system, almost all of them have grave concerns about how to finance it. Although many of these concerns can be managed as the United States deliberates whether to deploy an NMD system, the issue will remain important in the transatlantic relationship in the years to come.

New Missions

In light of this complex security picture, the United States will need to maintain a strong partnership with its European allies and friends to ensure that Europe remains strong, stable, and secure. The U.S. military

will play an important role in maintaining and strengthening the health of the transatlantic partnership.

In the last decade, the U.S. military has been on the leading edge of establishing bilateral defense relations with many countries that formerly were behind the Iron Curtain. American forces stationed in Europe or assigned to EUCOM are uniquely positioned to influence developments in the European security environment positively. Engagement activities involving U.S. military personnel include exchange programs, exercises, port visits, and regular assignments at NATO headquarters where American and partner-country personnel work side by side. These engagement activities, coupled with the regular overseas presence in Europe, ensure frequent and regular contact between U.S. forces and those from partner countries. Such contact helps to develop bilateral defense relationships and in many cases leads to productive collaboration on matters of mutual security concern.

Through the Partnership for Peace program, the United States and its allies seek to build positive relations with the former Warsaw Pact countries and the states of the former Soviet Union. American military personnel worked with their counterparts in Poland, Hungary, and the Czech Republic to help prepare them to join NATO. American forces in Europe also have worked closely with such nations as Ukraine, Romania, Slovenia, Bulgaria, and other partner countries, advising on how best to restructure and to reform their militaries and how to increase interoperability with NATO so that they can participate in peace operations such as SFOR or the Kosovo Force.

Finally, U.S. forces stationed in Europe play an important role in ensuring strong defense relations among the allied countries themselves. U.S. military personnel are stationed at NATO headquarters throughout Europe as part of the integrated military command structure; U.S. personnel have served in roles from Supreme Allied Commander in Europe to enlisted soldier in a ground unit committed to NATO operations. American forces in Europe participate regularly in Alliance exercises and also visit individual countries and conduct activities on a bilateral basis. These regular interactions generate the trust and mutual understanding that bind the NATO members to each other in times of crisis and that enable military forces from diverse nations to operate together during conflicts, such as the air campaign over Kosovo.

The major air operation over Kosovo in 1999 is just one example of the many ways in which U.S. forces are called upon to respond to crises

in Europe and in neighboring regions such as Africa and the Persian Gulf. American forces in Europe help to maintain stability in the Balkans, conduct noncombatant evacuations following natural disasters or violent political uprisings, and serve as peacekeepers after political resolution of conflicts such as the war in Bosnia-Herzegovina. U.S. forces in Europe are the foundation of the American Article V commitment to its NATO allies, however unlikely such a contingency appears in the current security environment.

Precisely because the likelihood of an Article V conflict is, and is likely to remain, so low in Europe, the primary role of U.S. forces there no longer is to be the tripwire for a major land war against a powerful adversary. American forces today perform the critical shaping tasks that help to maintain peace and stability in the region and are the U.S. first responders to conflicts that arise when shaping activities are unable to contain violence. Bringing forces from the continental United States to participate in exercises, exchange programs, and training activities is feasible, but the quality and quantity of these activities would be significantly lower than if in-theater forces are used. Forces in theater can exercise more frequently and longer because they do not have to spend time traveling across the Atlantic. They also are better positioned to build relationships with foreign counterparts because the same personnel can attend multiple events and develop substantive connections over time.

Similarly, forces in theater are better able to respond quickly to emerging conflicts than forces stationed in the United States. Operation *Allied Force* would have been significantly less effective if all or even a significant portion of the U.S. troops and equipment were required to be transported from the United States. Operations such as noncombatant evacuations, no-fly zone patrols, shows of force, and other SSCs would be much more difficult if the only forces available for such operations had to be brought from the United States. Many SSCs in the region and in surrounding areas might become more serious conflicts.

American forces in Europe not only are concerned with current engagement activities and crises, but they also must focus on preparing to deal with tomorrow's challenges. Troops will be transforming themselves as part of the ongoing evolution of the U.S. military and will play an essential role in encouraging transformation within the militaries of NATO allies. A strong transatlantic relationship is essential to ensuring that NATO allies continue to improve their military capabilities. If the relationship begins to deteriorate, the Europeans may move toward maintaining

only the basic military capabilities needed to address security problems in the immediate area.

Some might argue that a greatly reduced American presence in Europe would force the Europeans to assume greater responsibility for their own security, but past experience indicates that the Europeans might instead choose not to address important security concerns—as happened in the early years of the conflict in the former Yugoslavia. European nations with only minimal capabilities would be in no position to join the United States in coalitions of the willing to address larger security threats outside the European area. A significant American military presence in Europe is essential to demonstrating the enduring nature of the transatlantic relationship and to providing a continuing incentive for the Europeans to ensure that their military forces can operate effectively with the U.S. military in the future.

The internal transformation process, the Defense Capabilities Initiative, is the cornerstone of the Alliance effort to reinvent itself for the future. Energetic U.S. participation in DCI will be important, but the European members of the Alliance will ultimately determine its success. Current budget constraints in Europe are a major hurdle to significant improvements in European military capabilities. As the Europeans try to surmount this obstacle, U.S. forces in Europe will need to manage their own transformation process to avoid widening the capability gap between themselves and other NATO forces. The United States will not want to compromise its own military capabilities to remain interoperable with its allies, but it will want to avoid exacerbating the types of interoperability problems that were evident during the air war over Kosovo, such as the lack of compatible secure communications, of all-weather-capable European attack aircraft, and of European precision-guided munitions. The Alliance was able to manage these problems during the Kosovo conflict, but if NATO had to confront a more capable adversary than the Serbian military, such problems could prove to be a serious weakness. Finding creative strategies to remain sufficiently interoperable with its allies while avoiding dumbing down its own transformation process will be one of the more challenging tasks facing the United States in the future.

New Forces

The missions of U.S. forces in Europe have changed: containment is out, and engagement is in. Balkan peace enforcement operations in which NATO troops and Russian soldiers work side by side have replaced preparations for a clash of the titans on the battlefields of Central Europe.

However, the types of forces that the United States maintains in Europe have not kept pace with the changed missions. To alleviate readiness and retention concerns and to give U.S. forces the tools that they need to perform their missions more effectively, the United States should reshape its forces in Europe to be more deployable, sustainable, and flexible, and less oriented overall toward heavy combat operations.

Because the U.S. force structure in Europe still reflects its Cold War-era configuration, it is not designed to move troops quickly over long distances to a conflict. Ground forces in Europe are particularly cumbersome to deploy to relatively distant and primitively equipped staging areas such as Taszar in southeastern Europe or the staging areas in Albania used during Operation *Allied Force*. Ferrying the 10,300 pieces of equipment the Army requested for Task Force *Hawk* in Albania during the Kosovo operation required 550 C–17 flights. This cargo included M1A1 Abrams tanks (which are too heavy for most roads in Albania), 37 Blackhawk and Chinook helicopters to support the 24 Apache helicopters that made up Task Force *Hawk*, and approximately 6,200 troops sent to the base in Tirana to support the task force. Although the Army eventually transported all the equipment to Tirana, it faced major obstacles along the way: record rainfall, thigh-high mud, and primitive landing pads at the Rinas airport. Conditions such as these probably will be the rule rather than the exception in future operations in Europe.

Responding to specific criticism of its performance in Kosovo and to the broader argument that it is too slow and risks becoming irrelevant to modern conflicts, the Army has begun a transformation process with the goal of developing a mix of light, medium, and heavy forces. The centerpiece of this transformation process is development by 2003 of three to five rapidly deployable interim brigades with new medium-weight, wheeled assault vehicles. Army weapons designers hope to design a future combat system to replace the Abrams tank by 2010. Such a transformation, if successful, would greatly improve the ability of U.S. ground forces in Europe to respond effectively to future security challenges.

By contrast, naval forces assigned to EUCOM are inherently highly deployable. Naval assets such as an amphibious ready group/Marine Expeditionary Unit (MEU) or a carrier battle group are valuable assets that are used frequently to respond to fast-breaking developments. Naval assets are relatively scarce, however, so a carrier battle group is assigned to EUCOM for only 270 days a year and the MEU for just 300 days a year. Carrier battle groups are particularly scarce assets, and without a significant increase

to the U.S. defense budget, the Navy is not likely to build additional carriers beyond what already is envisioned in the defense program. At a minimum, a comprehensive policy review of how naval assets are allocated globally would ensure that the United States is applying these scarce assets as wisely as possible.

Another problem is that much of the U.S. force structure in Europe is oriented toward theater warfighting rather than the types of missions the military in Europe is now called upon to perform. In light of existing mission requirements in Europe and the fact that much of the heavy combat force required for a major theater war in a region such as the Persian Gulf could come from the continental United States, shifting the balance of forces based in Europe from heavy combat units toward medium-weight units and combat support and combat service support units should be considered. Eliminating combat-heavy forces in Europe altogether would be extremely unwise, but exchanging some portion of the existing heavy brigades for the new medium-weight units would greatly enhance the Army ability to address current threats in Europe effectively. These units would be able to move more quickly to a conflict than today's heavy units, but they also would retain sufficient combat power and force protection measures to maintain their combat effectiveness. A partial shift away from heavy combat units also would enable the United States to field more support units in Europe; these units perform many of the missions needed for SSCs. Medical, construction, and communications units, as well as the entire range of special operations forces stationed in Europe, are experiencing particularly high operational tempo rates. Increasing the number of support units in this theater would better equip the force structure to meet future challenges.

Although the threat posed by weapons of mass destruction is growing significantly, U.S. forces in Europe do not yet have a significant capability to defend against such threats or to operate in a WMD environment. American forces in Europe and worldwide need better protective gear and chemical and biological weapons detectors and a robust theater missile defense (TMD) system to protect them from missile threats on the periphery of Europe. The United States already is working to field this equipment, but it may need to place an even higher priority on this part of the defense program. Similarly, the U.S. military has made significant strides in integrating awareness of WMD threats into its program and planning processes in the last several years, but this issue still is not taken

into account sufficiently as the Pentagon determines its future requirements and budget needs.

Political Implications

Adapting the U.S. force presence in Europe to suit future security needs better not only makes military sense, but it also makes political sense both here and in Europe. A thoughtful, well-implemented plan to restructure forces in Europe would reassure European allies of the continued commitment by the United States to their security.

A well-structured American military presence in Europe, improved European military capabilities, and Congressional and public support for U.S. involvement in European security are inextricably linked. The NATO DCI, which is critical to bringing about real improvements in European military capabilities, will not succeed without strong American support and leadership. In order to lead effectively in Europe, the United States will need to be able to demonstrate, through a force structure configured to deal with the real challenges Europe faces, that it is committed to preserving European security. The United States will need Congressional support for transforming its forces in Europe, but if European NATO members do not improve their military capabilities over the next several years, Congressional support for future American involvement in European security affairs will waver. Legislative burdensharing provisions will proliferate and become more stringent, and the drive to move troops out of Europe altogether could gain significant momentum.

If managed properly, however, adapting U.S. forces in Europe could help push these interrelated trends into an upward rather than a downward spiral. An adapted U.S. force posture in Europe would reassure NATO allies that America remains seriously committed to helping Europe preserve its security and would provide a significant opportunity for the United States to lead by example in building support for the DCI. If, for example, the United States were to station medium-weight interim Army brigades in Germany, it would help the German government make the case to its own public and Parliament for lightening its extremely heavy combat structure, which is essential to making the German military more relevant for future operations.

Restructuring aspects of the U.S. military presence in Europe also would provide an opportunity to reevaluate American and allied roles. A fundamental review of defense roles can realistically take place only when NATO members are confident that new capabilities exist to support new responsibilities. A serious dialogue on this issue would reduce suspicions

on both sides of the ESDI debate. Such a dialogue will be essential to ensuring that the effort to flesh out a common foreign and security policy for Europe does not become a zero-sum game, pitting the European Union against NATO. A newly balanced division of labor within the Alliance would strengthen both European support for NATO and Congressional support for continued American involvement in Europe by disarming critics who charge that the Europeans are content to let the United States shoulder the burden on security issues.

The Middle East

The U.S. military presence in the Middle East, and particularly in the Arabian Gulf, is historically and quantitatively different than its presence in Europe. An average of 15,000 U.S. military personnel are deployed—most rotationally or temporarily—within the region. Much of this presence is naval, and the permanent footprint is relatively small. Support for the flow of follow-on forces exists primarily in the form of prepositioned war material, along with earmarked afloat prepositioned equipment on board ships anchored at Diego Garcia in the Indian Ocean.

The use of Diego Garcia is a helpful legacy of the Cold War, as is the rotational deployment of naval forces with a small U.S. fleet headquarters permanently located in Bahrain. But much of the additional access to supporting infrastructure is the result of U.S. leadership of the multinational coalition that ejected Iraqi forces from Kuwait, and most of the personnel within the region have an ongoing military mission in maintaining UN sanctions against the rogue regime of Saddam Hussein. This mission gives much of the U.S. land-based presence in the region a very temporary flavor. Symbolic of this is the fact that the headquarters for U.S. Central Command (CENTCOM) is located near Tampa, Florida, not in the Middle East.

Unlike Europe, the host nations within the region do not have permanent defense treaties with the United States, and they traditionally have been suspicious of the stationing of any foreign forces on their territory. Although Saudi Arabia, the United Arab Emirates, Bahrain, Qatar, Oman, and especially Kuwait desire a continuing and strong defense relationship with the United States, political and cultural concerns associated with Islamic fundamentalism dampen their overt support for anything that might appear to indicate a permanent U.S.—or other non-Muslim—presence. Presumably, the end of the UN sanctions or the replacement of the Saddam Hussein regime by another Iraqi government might lead to a

regional desire for reductions in U.S. land-based presence, but this impulse might be mitigated by concerns about potential aggression by Iran.

Another element that shadows the regional view of U.S. presence is long-term American support for Israel. In the wake of the Mideast peace process and the Gulf War, this shadow is not as big as it was in the 1970s and 1980s. However, the continuing potential for Arab-Israeli conflict and the unrest of the Palestinians often are used as premises for unofficial (and sometimes official) anti-U.S. presence sentiment.

The bottom line is that a clear and evident requirement—deterring Saddam Hussein or a potentially aggressive Iran—exists for the U.S. presence in the region. Ongoing operations include patrol of the two no-fly zones by coalition air forces. Preventing genocidal acts against minority populations such as the Kurds and deterring the proliferation of WMD are justifications for a reassuring U.S. presence, as is protection of the flow of oil from the Gulf region. However, political limits on the size of that presence constrain and channel CENTCOM planning for the possibility of a major theater war.

U.S. Interests

Perhaps the best way to assess the current and future requirement for a U.S. military presence in the region is to determine what the long-term U.S. interests are. The Secretary of Defense has identified U.S. interests in terms of "peace, where access to strategic natural resources at stable prices is unhindered and free markets are expanding."[4] Historically, American interests in the region have revolved around trade. Such interests predate the discovery of Middle East oil, but the dominance of the British Empire in the Gulf region limited American commercial involvement until after the Second World War. The British decision to withdraw all military forces from east of Aden in the early 1970s effectively ceded outside support for Arabian Gulf security to the United States.

The prospect of a permanent peace between Arabs and Israelis, curtailing threats to regional security by Iraq and Iran, and deterring proliferation or use of WMD appear to be necessary components for Gulf security. Achieving these goals also would eliminate much of the near-term threat to access. However, the flow of oil and transit through the Strait of Hormuz (and the Suez Canal) would remain an American strategic interest. Securing this interest would require a long-term (primarily maritime) presence that would closely resemble the U.S. regional presence before Operation *Desert Shield/Desert Storm.*

Promoting democratic governance often is cited as a significant element of the engagement activities of U.S. military forces overseas. But some inherent contradictions exist in this mission for CENTCOM, particularly in the Arabian Gulf, which does not have a tradition of democracy. Indeed, most U.S. allies in the region cannot be considered parliamentary democracies, although the degree of popular participation in government varies from state to state. Having democracy become firmly rooted in states throughout the Middle East may be a long-term U.S. and global interest, but the short-term result might be a regional instability that allows demagogues and populist dictators to overthrow the more moderate existing regimes. This possibility makes the near-term goals of U.S. presence in the region much narrower than its goals in Europe and East Asia.

Challenges and Implications

Barring heightened fears prompted by an act of overt aggression, regional leaders appear to have no incentive to ask for any increase in U.S. military presence. Likewise, because rotational naval forces operating in international waters or temporarily deployed air or land forces conduct much of the presence mission, no direct incentive exists to call for a reduction in U.S. regional presence. Fundamentalist anti-presence sentiment is focused against land-basing of what are viewed as "crusader" forces, implying that the presence of Western troops in the 21st century somehow is analogous to occupation of the Holy Land by Christian knights during the Middle Ages. Traditional enmities, even those that defy Western logic, remain.

However, changes in the nature of the potential threats within the region, notably the development of longer-range ballistic missiles potentially armed with WMD, may require changes in the form of U.S. presence posture. The development of antiaccess systems, including Iranian interest in acquiring antiship missiles and mines and developing a viable submarine force, appears to increase the range of potential threats to maritime forces. The October 2000 terrorist attack on USS *Cole* in Aden harbor in Yemen has renewed public concerns about the adequacy of force protection for U.S. military personnel in the region.

All these developments suggest an increasing regional requirement for TMD, chemical and biological detection defense systems, and improved methods of force protection. Although host-nation militaries could undertake certain of these improvements, many of them would need to be provided by U.S. forces. Without an increase in the number of

presence forces, this shift could require a change in their mix, substituting force protection units for other combat forces.

Another option would be an increase in naval presence, particularly proposed TMD-capable surface ships, or a focus on amphibious capability in lieu of land-based ground forces. Alternatively, increases in long-range strike systems stationed just outside the region (such as at Diego Garcia) could replace the emphasis on presence. However, a concurrent reduction in visible regional presence might have a very severe and deleterious political effect, eroding both deterrence and regional support for American interests.

Paradoxically, increasing force protection might reduce the regional engagement that U.S. presence forces currently conduct. The attack on USS *Cole* prompted questions about the need for U.S. military engagement with Yemen, a state not known for political stability or support for Western interests. Another issue has been the potential disparity between enhanced protection for the Armed Forces in the event of a WMD threat and the minimal or nonexistent protection afforded to the populations of the host nations by their own governments. One concern is the destruction of the host-nation support personnel and infrastructure needed for the entry of follow-on power projection forces. This concern could tilt the focus from force protection toward civilian population protection, which would necessitate some changes in the types of presence forces stationed in the region.

Such issues point to the complexity of maintaining a presence in a region where it is seen as but a temporary solution to current conditions. U.S. interests in the Middle East would appear to continue to revolve around resources and free markets. Although presence supports the stability of current governments in the region, it also attracts the ire of Muslim fundamentalists. This imbalance renders quite uncertain the long-range prospects of a contribution by a permanent land-based presence to democratic engagement and enlargement, previously a continuing goal of U.S. foreign policy.

Asia-Pacific Region

U.S. military presence in the Asia-Pacific region is largely the legacy of two half-century-ago wars: World War II and the Korean War.[5] As a result of these wars, the United States established and has maintained substantial forces in South Korea and Japan. Throughout the Cold War, these forces helped deter not only North Korean but also Soviet aggression in

Northeast Asia. With the collapse of the Soviet Union, these forces continue to serve as a deterrent to North Korean aggression. However, the regional security paradigm is changing. Although predictions of the imminent demise of the Democratic People's Republic of Korea have proven to be exaggerations, the country's long-term viability remains questionable, and a fundamental change in the security equation on the Korean Peninsula is likely to occur within the next decade. Meanwhile, Chinese military capabilities are steadily increasing, with no sign that Beijing intends to give up its authoritarian system of government or its threats to use force against Taiwan under certain circumstances. In South Asia, both India and Pakistan have tested nuclear weapons, raising the specter of nuclear war on the subcontinent.

These changes to the Asian security environment offer the United States an appropriate time to reassess its security posture in the region and consider what changes it ought to undertake. If major changes to U.S. posture are needed, time will be required to build the necessary political consensus and then to implement the changes. The movements in the Asia-Pacific region may appear to be occurring at the pace of continental drift, but as the tectonic plates of the security environment grind past each other, they could suddenly slip—fundamentally altering the landscape before the United States has prepared adequately for change.

U.S. Interests

To secure its fundamental interests of maintaining the territorial, political, and social integrity of the United States, ensuring the lives and safety of its people, and promoting the prosperity of the Nation and its people, the United States pursues a number of specific goals. These include preventing the emergence of a hostile power capable of threatening these fundamental interests, deterring aggression against U.S. friends and allies, promoting the growth of democracy throughout the world, ensuring U.S. economic access to important markets, commodities, and trading partners, and preventing the spread of dangerous military technologies. In the Asia-Pacific region, only three countries appear to have the potential to rival the military capabilities of the United States in the next 50 years: China, Japan, and India. At present, none of these countries is overtly hostile to U.S. interests—although Japan is the most friendly and China the least—and none of them possesses anything comparable to U.S. military capabilities. The goal for the United States with regard to these three countries, therefore, is twofold: ensuring that they remain friendly to the United States, and ensuring that they do not develop military capabilities

that could challenge those of the United States. The more certain the United States is of the friendliness of a nation, the more willing it is to accept the possession of significant military capabilities by that nation.

The United States has formal military alliances with Australia, Japan, the Philippines, South Korea, and Thailand. The United States has a more ambiguous security commitment to Taiwan, as embodied in the 1979 Taiwan Relations Act. The United States has a security relationship with Singapore that includes a small, permanent military presence there, which brings with it an implied interest in Singapore's security. America also enjoys friendly relations with a number of other countries in the region and would not like to see their sovereignty or independence threatened by a country hostile to the United States.

Democratization is an ongoing trend in the Asia-Pacific region; South Korea, Taiwan, and the Philippines have enjoyed democratic transitions in the last 15 years, and other states also are taking steps in the direction of democracy. Many countries still are not fully democratic, however, and some, such as China, Vietnam, and Burma, remain authoritarian dictatorships. The continuation of the democratic systems in those states that are already democracies, and the democratization of those that are not, particularly China, are important U.S. interests in the region. Fortunately, two of the three states with the potential to become major military powers—Japan and India—already are full-fledged democracies.

Although the United States remains dissatisfied with its access to the markets of many countries in the region, particularly China and Japan, the Asia-Pacific region is a vital trading partner of the United States, with transpacific trade well exceeding transatlantic trade. American companies also have more than $100 billion invested in the region. Any attempt to create an exclusionary trading bloc that denied economic access to important U.S. trading partners in the region (particularly Japan, China, South Korea, or Taiwan), or actions that imperiled the economies of major trading partners, would threaten the vital national interests.

The spread of dangerous military technologies also is a concern in the Asia-Pacific region. Several countries (China, India, Pakistan, and possibly North Korea) already possess nuclear weapons. Some of these countries are attempting to increase their arsenals, and other states may be attempting to acquire nuclear weapons as well. A number of regional states are suspected of possessing chemical or biological weapons, and several (China, India, North Korea, and Pakistan) are upgrading their ballistic and cruise missile capabilities. These technologies in the hands of some

countries, such as India, are not a direct threat to the United States, but the more countries that possess them, the greater the likelihood that they will spread to countries that are a direct threat to the United States. China and North Korea, in particular, indiscriminately will transfer nuclear and missile technology to any country willing to pay for it, and the mere demonstration effect of India and Pakistan acquiring nuclear weapons may encourage other countries to pursue them as well. Moreover, the actual use of a nuclear weapon in war would break the nuclear taboo that has been in effect in 1945, increasing the likelihood of subsequent use—a development that clearly would counter the interests of the United States (or almost any other country). The United States, therefore, has a strong interest in preventing the further spread or development of nuclear, biological, chemical, and missile technology in the Asia-Pacific region.

Potential Challenges

The most prominent of several possible developments that could threaten U.S. regional interests remains conflict on the Korean Peninsula. The possibility that North Korea could launch an attack on South Korea—perhaps as an attempt by Pyongyang to maintain its hold on power by creating a national emergency—remains real, if apparently remote. A more likely scenario would be the collapse of the North Korean state, which probably would result in the intervention of South Korean and American forces to restore order. If China also intervened (perhaps because of refugee flows into Manchuria), the danger of conflict between China and the United States or South Korea would arise. The United States already is well positioned to deal with any contingencies on the Korean Peninsula, however, and none of these scenarios seem to require a change in U.S. force posture.

The possibility of a Chinese attack on Taiwan is of increasing concern. Although Beijing seems to have come to terms temporarily with the Taiwanese election of a president from the pro-independence Democratic Progressive Party, China has not given up its claim to the island and continues to assert its right to use force to recover it. Considering current Chinese military capabilities, which are unlikely to change significantly in the immediate future, any attempt to invade the island almost certainly would fail. Nonetheless, evidence indicates that Beijing hopes to force a resolution of the Taiwan issue by the year 2005 or so. If attempts at peaceful persuasion fail, some form of coercion using air and missile attacks or a naval blockade would be more likely than an outright invasion.

China also could attempt to use military means to enforce its claims to the islands of the South China Sea. So far China has adopted a patient approach in resolving these disputes, but it could come into conflict over the islands with Vietnam, the Philippines, Malaysia, or Taiwan. Rather than an outright attempt by one country to evict another from an island it occupies, the most likely scenario is a clash at sea. Such a conflict might occur as a result of countries attempting to enforce claims to territorial waters or of one country attempting to prevent another from landing on an unoccupied island (such as Fiery Cross Reef in 1988) or reinforcing an existing garrison. Conflict among claimants other than China, although less likely, also is a possibility. The use of force against an ally such as the Philippines would be a threat to national interests, and even if a U.S. ally were not involved, naval conflict in the South China Sea could disrupt shipping through some of the world's most important shipping routes.

Nuclear war between India and Pakistan would be detrimental to U.S. interests as well. Although neither country is an ally or important economic partner of the United States, nuclear war would be a huge humanitarian and environmental catastrophe. More significantly from a strategic perspective, the demonstration effect of the use of nuclear weapons and the breaking of the nuclear taboo could increase the likelihood that other countries that already possess nuclear weapons might also use them. Likewise, states that do not already possess nuclear weapons could be encouraged to seek to acquire them.

Other interstate conflicts in the region are conceivable, although less likely. Developments other than interstate conflict also could be detrimental to national interests. An attempt by a regional power such as China to dominate part or all of the region politically would be one example. Such action could weaken American influence over its allies and friends in the region, thus undermining overall U.S. power and security while augmenting the power and influence of a country that could threaten the United States. Regional domination accompanied by trading policies that discriminated against the United States would threaten U.S. economic interests as well.

Any weakening of the U.S.-Japan alliance would be a serious concern for America. A Japan that no longer enjoyed a close security relationship with the United States would be likely to increase its military capabilities in order to protect its interests in the region. This buildup, in turn, might cause other countries—such as China or Korea—to feel threatened and to bolster their own military capabilities in response. A weakening of the

U.S.-Japan alliance probably would increase pressure for the United States to withdraw its forces currently stationed in Japan, reducing U.S. ability to project power and influence in the region. None of the overall results—a Japan no longer closely aligned with the United States and that had turned its formidable economic and technological capabilities to the development of military power, an increase in the military capabilities in other countries in the region, and a reduction of U.S. military capability in the region—would be in U.S. interests.

Related to this issue is the question of the U.S. role in Korea and Japan subsequent to a resolution of the Korean problem. Because the presence of U.S. forces in both Korea and Japan is justified primarily in terms of potential contingencies on the Korean Peninsula, popular sentiment in Korea, and possibly Japan as well, probably would strongly favor the removal of U.S. forces if the threat of war on the Korean Peninsula dissipated. The result of such a withdrawal, however, would be a Korea left alone between two major regional powers, China and Japan. Such circumstances might compel Korea to increase its military capabilities, which could cause Japan to feel uneasy (particularly if the ending of the potential Korean conflict also resulted in a withdrawal of U.S. forces from Japan) and to build up its own military capabilities. In turn, China could perceive this move as threatening, with the net result being a region significantly more militarized than at present, and a weakened U.S. relationship with its two most powerful allies in the region. Preventing such an outcome, therefore, is an important U.S. interest.

Another development for which the United States must be prepared is the failure of an important state in the region. The breakup of China no longer appears plausible, but it still cannot be ruled out with complete certainty, while the long-term viability of countries such as Pakistan, Indonesia, and North Korea remains open to question. A Pakistani collapse would have repercussions throughout South and Southwest Asia. Factional conflict within and between the resultant pieces of the Pakistani state would be likely and could involve intervention by India from the east or Iran from the west. Control over Pakistani nuclear weapons would be a serious concern, with a high risk that they might fall into the hands of a state or nonstate actor hostile to the United States.

An Indonesian collapse would be detrimental to U.S. interests in the region. In addition to the humanitarian disaster it would represent, there also would be a danger of sectarian conflict spreading to other countries

in the region (primarily the Philippines, Singapore, and Malaysia), massive refugee flows, and increased piracy and disruptions of commerce.

A final candidate for collapse is North Korea. Although, as with China, this no longer seems as likely as it did a few years ago, it still cannot be ruled out. Most of the resulting refugees undoubtedly would attempt to migrate south, but some would also flee toward China, particularly if they were thwarted in their efforts to reach South Korea. This might cause China to intervene in North Korea to restore order. South Korea would likely attempt to enter the North as well. Since a North Korean collapse probably would result from paralysis of the Pyongyang government, perhaps because of or accompanied by a coup attempt or civil war, the risk of conflict between some combination of South Korean, North Korean, and Chinese forces would be high. The situation would be further complicated by the existence of North Korean NBC weapons.

Developments in military technology also can pose challenges to U.S. interests in the region. The most significant of these are the increasing numbers, range, and accuracy of ballistic and cruise missiles. In the post-Cold War era, the United States has become accustomed to enjoying invulnerability in its rear areas during regional conflicts. This security would not necessarily be the case in the event of conflict in the Asia-Pacific region. China, North Korea, India, and Pakistan all possess ballistic missiles, and China is developing cruise missiles as well. China has long possessed nuclear-armed ICBMs capable of reaching the continental United States, but the existence of conventional missiles capable of striking U.S. airbases and other rear-area targets represents a new challenge to conducting military operations in the region.

Implications for U.S. Military Posture

The United States is well postured to respond to the most likely immediate challenges on the Korean Peninsula: inter-Korean conflict or a North Korean collapse. However, it must also prepare for the eventuality of a resolution of the Korean problem, which might result in strong popular pressure for the removal of all U.S. forces. As a complete American withdrawal from Korea would not be in the interest of either the United States or the Republic of Korea, the United States should seek ways to ensure that it could maintain forces on the peninsula even after the Korean problem was resolved. This could well entail a significant reduction in troop numbers along with their reassignment to less intrusive locations, as well as a skillful public relations campaign to persuade the Korean people of the value of a continued U.S. military presence.

A similar argument applies to U.S. military presence in Japan. Resolution of the Korean problem undoubtedly would increase the pressure for a reduction in or removal of U.S. forces from Japan, but such sentiments are already growing. To counter this trend, the United States must seek ways to revitalize the U.S.-Japan alliance. Most fundamentally, this requires treating Japan as an equal partner in the relationship. Although allowing Japan to move beyond a subordinate role in the relationship might risk having it question the continued need for U.S. military presence, perpetuating the current unequal relationship ensures that the issue will one day explode. As in the case of a post-resolution Korea, the United States must be prepared to contemplate reductions in its presence in Japan.

However, certain U.S. facilities in Japan will remain critical to U.S. ability to project power and influence in the region even after the danger of inter-Korean conflict has ended and should be retained if possible. The naval facilities at Yokosuka and airbases at Kadena play particularly vital roles. If United States were no longer able to base an aircraft carrier in Japan (or somewhere in East Asia), U.S. carrier presence throughout the world would be reduced. Additional carriers would be needed even to maintain a partial presence in East Asia, but increasing the total Navy complement of aircraft carriers beyond the current 12 would be very costly.[6]

The airbase at Kadena also is vital to U.S. security because it is the only U.S. airbase within tactical fighter range of Taiwan. Without access to Kadena, the United States would be forced to rely primarily on carrier-based aviation to support defense of Taiwan in the event of a Chinese attack. (Aircraft also could reach Taiwan from Guam and other distant bases, but at the cost of a vastly reduced sortie rate and substantially increased requirements for refueling aircraft.) The airbases at Misawa on mainland Japan are less vital but still are important because of the role they play in facilitating the movement of tactical aircraft from the United States to Asia. Short-range aircraft flying out of bases in Alaska are met over the northern Pacific by refueling aircraft based at Misawa, which enables them to reach Japan. From Japan, the aircraft can, with additional ground or air refuelings, continue on to contingencies throughout Asia.

The Marine Corps maintains extensive facilities in Japan, primarily in Okinawa but also in mainland Japan. Replacing these facilities would be extremely costly, and whether another home could be found for III Marine Expeditionary Force (MEF) elsewhere in East Asia is questionable. Nonetheless, the inherent mobility of the Marines means that there is no

absolute requirement for them to be located in Japan, particularly if they were no longer needed for a Korean contingency. If a reduction in U.S. forces in Japan resulted in the relocation of III MEF to Hawaii or the west coast of the United States, aside from the considerable cost of constructing facilities to accommodate them, the primary operational impact would be a several-day increase in the time required for them to deploy to a contingency in Asia. Thus, although valuable, the Marine Corps presence in Japan is not as vital as the basing of an aircraft carrier at Yokosuka and having an airbase at Kadena. If a reduction in U.S. military presence in Japan were necessary, the Marine Corps facilities in Okinawa and the Air Force base at Yokota probably are the least vital of major American installations in the country and therefore the most likely candidates for reduction. Reductions alone, however, will not ensure the sustainability of military presence in Japan and could simply encourage attempts to eliminate all American bases in Japan. Reductions should occur only in the context of a restructuring of the U.S.-Japan security relationship aimed at ensuring the long-term viability of the alliance.

Other than in South Korea and Japan, U.S. military presence in the region is sparse, particularly in South and Southeast Asia. The U.S. military periodically exercises with the militaries of nations in this region, and Navy ships transit the region and conduct port calls and exercises. In addition, Singapore and Australia have allowed the Navy and Air Force to maintain liaison offices in their territory. The Air Force regularly deploys aircraft to Singapore for training purposes, and Singapore has built a pier capable of accommodating visiting nuclear aircraft carriers. The Air Force and Marine Corps periodically use training areas in Australia, and the Navy conducts exercises offshore. The United States maintains naval and air facilities on Guam in the western Pacific and on Diego Garcia in the Indian Ocean.

The United States should seek ways to increase its military presence in other countries in South and Southeast Asia. This presence should not, however, necessarily come in the form of large sovereign bases such as those the United States maintains in South Korea and Japan (and as it formerly did in the Philippines). In an era of constrained defense budgets and the absence of an unambiguous threat, justifying the expense would be difficult. Moreover, countries in the region are unlikely to allow the United States to establish new permanent bases on their territory. Almost all significant overseas U.S. bases were established in the aftermath of a major war. In the absence of such a war or an immediate threat, countries

will have little motivation to bear the political costs associated with a perceived compromise of national sovereignty.

Instead, the United States should seek to extend to other countries in the region the type of arrangement it has with Singapore—a small permanent liaison staff and regular temporary training deployments by larger combat units to facilities owned and operated by the host country. Regular deployments of land-based forces to these countries would provide an opportunity to train in a variety of regional environments, facilitate interoperability with allies and potential coalition partners, and deter regional aggression. They also would increase the logistical and political ability of the United States to operate out of those countries in a contingency, whether interstate war or humanitarian crisis. The Armed Forces already have considerable naval access and some land-based access to Australia, but current arrangements should be further expanded, if possible, to make use of the excellent training areas available in that country. The United States also should seek to expand its presence on the territory of its other regional allies, the Philippines and Thailand. Given its former colonial relationship with the Philippines, the United States must be sensitive to the delicacy of the issue there and not attempt to acquire greater access than is acceptable to the Philippine people. Nonetheless, given the strategic location of the Philippines, particularly relative to the South China Sea, and the continuing U.S. alliance relationship with it, both countries would benefit if America had an increased ability to train with Philippine forces and operate out of Philippine bases. A similar argument applies to Thailand, which occupies a strategic location as the only U.S. ally in mainland Southeast Asia. Where possible, comparable arrangements should be made elsewhere in South and Southeast Asia—perhaps India, Indonesia, Malaysia, and even Vietnam.

Finally, the United States should consider upgrading its facilities on Diego Garcia and Guam. The United States has major air and naval facilities at Guam, but they are underutilized and have fallen into disrepair, and the facilities at Diego Garcia are limited. Both islands occupy strategically similar locations within their respective regions, being at least several hundred miles from the Asian mainland. This location limits the ability of tactical aircraft to operate from bases there but has the advantage of being out of range of most missiles possessed by countries in the region. Thus, long-range aircraft and naval forces could operate out of bases on these islands in relative safety. Guam has the advantage of being roughly equidistant between Northeast Asia, Taiwan, and Southeast Asia,

while Diego Garcia is the only U.S. military facility in South Asia (although the United States does have access to some facilities in the Arabian Gulf). Refurbishing the air and naval facilities in Guam would enable U.S. forces to operate more effectively from there in event of a crisis in East Asia, and expanding the facilities at Diego Garcia would increase the ability of U.S. forces to respond to a crisis—humanitarian or otherwise—in South Asia.[7]

Opportunities for Change

Overseas military presence is a fundamental requirement for any defense strategy based primarily on power projection, and QDR 2001 is unlikely to challenge the concept of a robust U.S. overseas presence. However, the type of presence and the nature of the forces stationed overseas logically will be significant QDR issues.

The potential for some change already is building. The shift of the Air Force toward a rotational Air Expeditionary Force (AEF) concept, along with the inherent sovereignty and force protection characteristics of naval-forward presence, might prompt a move toward a more maritime-based presence backed by greater deployment of longer-range strike forces stationed just outside or on the well-protected fringes of the region. This model may be a good one for the Arabian Gulf region, where any increase in land-based presence would seem problematic politically. It also could be a solution to some Pacific region presence issues. But it would help little with potential conflicts in the former Soviet republics of Central Asia, where the United States currently has no presence forces; it would not increase the interoperability of ground forces in areas such as South and Southeast Asia; and it would not be sufficient for broader NATO activities in the Balkans or elsewhere.

The United States maintains a very real and abiding interest in European security affairs. Forces in Europe perform numerous important missions to ensure that the United States can achieve its foreign policy objectives in that region. The needs of the European theater deserve to be given careful and thorough consideration in light of the essential role played daily by Americans stationed there. The Soviet Union is a thing of the past, but the need to maintain a strong and capable U.S. military presence in Europe is very much an obligation of the present and future. This presence should, however, consist primarily of lighter forces with greater mobility than the Cold War remnants currently in place.

In a resource-constrained environment, reshaping U.S. forces in Europe will not be easy, but the upcoming QDR provides an ideal opportunity for DOD to consider these issues in the context of global U.S. overseas presence. In some cases, changes could be pursued through ongoing transformation initiatives, such as the Army transformation plan and the AEF concept. However, attempting to adapt U.S. forces in Europe solely through a series of existing efforts that are not tightly integrated risks generating a force structure in Europe that, even if it is better suited than the Cold War remnants, will fall short of a solid solution. The QDR 2001 provides a needed opportunity to examine the requirements of the European theater across the board and to assess how those needs compare to those of other theaters.

U.S. presence in the Arabian Gulf region should balance long-term American interests with current political conditions, in which a rogue regime continues to defy collective world concerns about the development of weapons of mass destruction and the potential for cross-border aggression. An additional factor is that the operational U.S. presence tied to the Northern and Southern no-fly zones imposed on Iraq ultimately have a UN mandate and are not part of a permanent regional agreement. A maritime-oriented presence—legitimated by the legal freedom of the seas—may be optimal for long-term U.S. interests in free trade and the flow of natural resources, but some degree of land-based presence still appears essential in helping to constrain current threats. Because of the narrow physical confines of the region, notably the Strait of Hormuz, the development of antiaccess weapons and strategies may have even more of an immediate impact on regional presence decisions than changes in political conditions. Current political conditions may make it difficult for QDR 2001 to advocate any fundamental change in the size of presence forces in the region, although a force mix tilted toward counterproliferation and force protection could be a logical recommendation.

The Asia-Pacific security environment is evolving, and U.S. presence in the region must evolve as well. The Cold War has ended, and the Korean confrontation appears to be winding down, while Chinese power and reach are growing. The risk of conflict in the South China Sea appears to be increasing, as are the danger of war in South Asia and the chances of state failure in South, Southeast, and Northeast Asia. The United States must ensure that it has adequately prepared the way for the type of presence it needs to maintain in Northeast Asia when the Korean confrontation has ended. This includes considerations of stability and

reassurance for Japan, China, and Korea, and also of U.S. ability to maintain its presence and to project power throughout the region. The United States must expand its presence in South and Southeast Asia, not through the establishment of new sovereign bases but through access arrangements that allow it to deploy forces regularly to countries in these subregions without compromising their sovereignty. The current defense relationship with Singapore may provide a suitable model. The United States also should upgrade its facilities in Guam and Diego Garcia. The range of missiles possessed by potentially hostile countries is increasing, and the likelihood of regional crises is increasing. The United States needs bases that are well away from the mainland but close enough to support operations in response to those crises. Fundamental shifts gradually are taking place in the regional security landscape; to protect and advance its interests in the region, the United States must adapt its overseas presence in anticipation of, rather than in reaction to, these shifts.

The QDR will allow DOD to take stock of its entire defense strategy and what it requires in the context of likely available resources. A decision in the next QDR to depart from the two-major theater war requirement clearly would have implications for what might be available for overseas presence. These implications must be well understood before any decisions are made concerning what to do with those very visible pieces of U.S. force structure.

In the absence of a change in the requirements needed to implement the strategy and without significant additional resources for defense, the only way to make the kinds of changes outlined here will be to make tradeoffs among force structures in various theaters. Only by carefully and objectively assessing the needs of one theater against another during QDR 2001 can sound decisions be reached about whether these types of changes would be beneficial to achieving U.S. objectives without jeopardizing achievement of U.S. foreign policy objectives as a whole.

Notes

[1] This does not include the wars fought against domestic opponents, notably the American Civil War and numerous wars against the Native American tribes. There have also been casualties inflicted on American soil as part of foreign wars (such as at Pearl Harbor); however, no major land battles were conducted in the continental United States.

[2] Power projection is defined as "the ability of a nation . . . to rapidly and effectively deploy and sustain forces in and from multiple dispersed locations to respond to crises, to contribute to deterrence, and to enhance regional stability." From Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms,* at <www.dtic.mil/doctrine/jel/doddict/>.

[3] Another method of categorizing overseas presence forces—one used in recent reports of the Secretary of Defense—is by their degree of permanence. In this construct, overseas presence forces can be categorized as (1) permanently stationed, (2) rotationally deployed, and (3) deployed temporarily for exercises, combined training, or military-to-military interactions. See Secretary of Defense William S. Cohen, *Annual Report to the President and Congress 2000*, 4.

[4] Cohen, *Annual Report to the President and Congress 2000*, 11–12.

[5] For purposes of this section, the Asia-Pacific region is taken to be roughly equivalent to the land portion of U.S. Pacific Command area of responsibility. It includes South Asia (from Pakistan eastward), East Asia, and Southeast Asia.

[6] In addition to the naval facilities at Yokosuka, an air base is needed nearby to support the aircraft carrier's air wing. Atsugi Naval Air Field serves that purpose now, but the field has environmental and safety problems. If the Marine Corps air wing stationed at Marine Corps Air Station Wakuni or U.S. Air Force units stationed at Yokota were withdrawn, the aircraft carrier air wing could be relocated to either of those facilities.

[7] Diego Garcia is British territory leased to the United States for a finite period. The British government currently is facing claims to the land by the descendants of its former residents, Maldive Islanders who were brought to Diego Garcia to work on the copra plantations there. These issues would have to be resolved before the United States invested in a significant expansion of its facilities on Diego Garcia.

Chapter Ten

Peacetime Operations: Reducing Friction

by John J. Spinelli

Fighting and winning the Nation's wars is the most visible mission of the U.S. military, but its operations in peacetime also are critical. When we see a humanitarian disaster in the making or a chance for peace on the horizon, we often consider committing the military to assist; the price to pay might be small for the greater good that it can yield. Given that we are not at war, that we spend billions on defense, and that we have remarkable advantages in technology and capability, the sheer size of the U.S. military makes it easy to assume that a few peacetime operations should be "a drop in the bucket."

Yet today's military increasingly is showing signs of stress as it conducts peacetime operations while maintaining readiness for war. Recent recruiting and retention shortfalls as well as slippage in unit readiness have caused significant concern. Officials worry about an overextended military, about units losing their warfighting edge by conducting peace operations, and about scarce and expensive resources mired in commitments with no end in sight.

For this chapter, *peacetime operations* are defined as those missions short of major theater warfare that execute U.S. national military strategy.[1] They occur daily and involve all components of the total force: active, Reserve, and civilian. The scope of these operations is broad and includes overseas military activities such as presence, military-to-military contacts, and exercises; support to domestic authorities such as disaster relief and counterdrug support; and myriad contingency operations such as humanitarian assistance, peace operations, and shows of force. Today's national security strategy requires integrated approaches that shape the international environment, respond to crises, and prepare now for an uncertain future. Peacetime operations generally support the shaping and responding elements of U.S. strategy.

This chapter seeks to accomplish three things:

- Establish a framework for thinking about U.S. military peacetime operations by organizing numerous activities and linking them to U.S. national security strategy;
- Identify the major demands for U.S. military forces and the significant challenges, or points of friction, that are caused by today's peacetime operations environment, especially smaller-scale contingencies (SSCs); and
- Offer several broad policy approaches for consideration in future analysis of defense strategy, force sizing, and force structure.

The chapter begins with a review of the U.S. military missions and forces integral to the shaping and responding elements of strategy. Points of friction resulting from these activities are then described and discussed in detail. The chapter concludes with policy options to serve as a starting point for analysis during QDR strategy development and implementation.

Shaping the Environment

U.S. military peacetime operations shape the international environment by creating, fielding, and sustaining credible forces that can achieve multiple purposes: reassure and influence allies, deter adversaries, and influence neutral countries. Overseas presence embodies the notion of global military engagement and shaping. On a day-to-day basis, thousands of soldiers, sailors, marines, and airmen demonstrate American values, capabilities, and resolve. The presence of these forces overseas is a visible signal of U.S. commitment to other nations and their peoples. Through a variety of engagement activities, the Armed Forces promote regional stability, increase the security of allies and friends, build coalitions, and ensure a more secure global environment. Participation in alliances and coalitions also can influence decisions on the allocation of leadership positions and on strategy and policy. Overseas presence forces must be able to conduct a full spectrum of activities with allies and be capable of independent, sizable combat operations when combined with forces stationed in the United States. By their operations and activities in theater, U.S. forces are well positioned to assess the capabilities and weaknesses of allies, potential adversaries, and other regional states alike. They also are strategically postured for rapid response to crises.

The credibility and deterrent effect of the Armed Forces is not possible without a significant investment in the institutions and infrastructure that generate military power. A third component of peacetime shaping operations requires U.S. strategic forces for purposes of deterrence.

Generating Military Power

Today's unmatched U.S. military might is the product of years of effort and many unique and vital institutions and processes. These assets—facilities, equipment, and personnel—conduct or support activities that recruit, organize, train, equip, maintain, care for, sustain, deploy, redeploy, and reconstitute the military organizations and personnel that are employed worldwide. For example, they are the people who recruit at shopping malls, teach at boot camps and service academies, provide health care at hospitals and clinics, write U.S. military doctrine, and run installations and training ranges. They staff the military departments, operate strategic deployment facilities, manage finance and accounting systems, and buy and repair weapons and equipment. Generating military power also includes numerous organizations that conduct planning, direct activities, acquire material and services, and analyze all aspects of military operations.

These assets, including roughly one-third of each service's active military personnel, as well as nearly all DOD civilians, predominantly are committed to building the force and power projection of military units stationed in the United States.[2] Thus, they are not directly conducting peacetime engagement, SSCs, or MTW. In areas such as research and development and acquisition, these DOD assets also support preparing now for an uncertain future, the third component of U.S. security strategy.

Peacetime Engagement

The heart of the shaping strategy component is the daily commitment of over 200,000 military and DOD civilian personnel throughout the world (see table 10–1).[3] Regional CINCs plan and conduct engagement activities based on guidance from the National Command Authorities and the Chairman. CINC engagement plans are designed to achieve prioritized objectives for their area of responsibility and to incorporate the particular geographic, economic, political, military, and cultural features of the area. Engagement includes a variety of missions, organizations, and resources for such actions as international military exercises, military-to-military contacts, Partnership for Peace activities in Europe, defense cooperation activities, foreign military sales, the International Military Education and Training program, treaty obligations and security commitments, humanitarian assistance (including medical and engineering projects), humanitarian demining, and counterdrug operations.

Military engagement activities are viewed as an essential instrument for bolstering the security of allies, strengthening alliances and coalitions,

and building constructive security relationships.[4] In some cases, the U.S. military serves as the preferred means of engagement with countries that are neither staunch friends nor confirmed foes. Engagement also provides numerous opportunities to encourage adherence to international norms and regimes that serve as foundations of peace and stability.

A portion of the U.S. military forward-deployed force is embedded in the institutions and processes associated with numerous international activities and generally would be unavailable for redeployment to SSCs or MTW. For example, support to NATO military staff, embassy military attachés, and overseas installation operations probably would continue despite out-of-area operations. Other deployed forces would be available for contingencies or theater warfare, although such shifting of commitments may entail additional cost and risk (see table 10–1).

Strategic Nuclear Forces

Strategic nuclear forces complement conventional U.S. capabilities in deterring aggression and coercion. They serve as a hedge against an uncertain future, a guarantee of security commitments to allies, and a disincentive to those contemplating the acquisition and use of nuclear weapons. The United States maintains a robust triad of strategic forces to deter hostility or attempts to seek a nuclear advantage. These forces are not normally associated with SSCs or MTW. Today's force structure is estimated to cost $6 billion per year and includes 550 intercontinental ballistic missiles, 18 ballistic missile submarines, and 113 heavy bombers.[5] (A more detailed review of strategic nuclear forces is provided in chapter 12.)

Responding to Crises

The United States and others in the international community generally seek to prevent and to contain localized conflicts and crises without the use of military force. If such efforts do not succeed, however, intervention by military forces may be necessary. Although the spectrum of possible crises ranges from providing humanitarian assistance to fighting and winning MTW, the most frequent future challenges are expected to be SSCs. Peacetime operations that respond to crises include military assistance to civilian authorities and SSCs.

Aid to Civilian Authorities

Extending military support to civilian authorities in the United States is both expected and required in a variety of circumstances, including disaster relief, immigration emergencies, transport or other support of presidential

Table 10–1. Summary of U.S. Forward-Deployed Forces

Region[1]	Personnel[2]	Army Units[3]	Navy Units[4]	USMC Units[5]	AF Units[6]
Europe	100,000	2 Heavy Div (–)	1 CVBG/ARG	1 MEU	2.3 FWE
Pacific	100,000	1 Heavy Div (–) 1 Light Div (–)	1 CVBG/ARG	1 MEF 1 MEU	2 FWE 1.25 FWE (Alaska)
Southwest Asia	15,000	1 Heavy Bn Task Force	1 CVBG/ARG	1 MEU	1 FWE

[1] U.S. Southern Command, not listed, also conducts various engagement activities in its area of responsibility. For example, over 15,400 National Guard and Army Reservists train there annually, comprising 40 percent of all exercises.

[2] Approximate steady-state presence; does not reflect "surges" for specific operations and exercises.

[3] Heavy divisions are armored and mechanized; (|) indicates at least one combat brigade is not forward-deployed. An attack helicopter battalion is also located with the Heavy Battalion Task Force in Southwest Asia.

[4] CVBG is carrier battle group of a carrier and air wing plus various surface combatant ships and attack subs. ARG is amphibious ready group with large-deck amphibious assault ship, transport dock, and dock landing ships, and embarked Marine Expeditionary Unit (Special Operations Capable).

[5] MEF is Marine Expeditionary Force, an air-ground task force built around a division/wing team. MEU is Marine Expeditionary Unit built around a battalion landing team, reinforced helicopter squadron, and logistics support unit.

[6] FWE is Fighter Wing Equivalent of 72 aircraft, based on primary mission aircraft inventory. As the Aerospace Expeditionary Force concept is implemented, the designation AEF rather than FWE will be adopted.

visits and events, wildland firefighting, civil disturbances, and military assistance to safety and traffic. DOD has supported more than 200 domestic disaster-relief operations since 1975 and was involved in at least 50 different support activities in 1999 alone. Support for civil authorities involves all military services and requires active and Reserve component (RC) forces as well as civilians. Often overshadowed by higher-profile events, military support is a critical, longstanding mission that continues to grow.[6]

Although the DOD has no "military support to the nation" battalions or other dedicated force structure elements, the requirements can be dramatic.[7] For example, supporting the 1996 Atlanta Olympics required 14,653 active and National Guard personnel from 47 states and territories, over 300 aviation support missions, and more than 300,000 items of equipment for use by state and local authorities. Over 1,200 active-duty soldiers and Marines fought fires in California and Oregon during 1996. Thirteen thousand military personnel (active-duty and National Guard) were employed to help restore order in the Los Angeles metropolitan area during civil disturbances in 1992.[8]

DOD also enhances the capability of the federal government to prevent and to respond to terrorist incidents involving weapons of mass

destruction and helps support the capabilities of state and local emergency response agencies with regard to such incidents. (Homeland security issues are covered in chapter 3 on asymmetric threats.) Such missions are important, and the military is often the only federal agency that can provide immediate response, but each operation requires time, personnel, training, and funding. These activities must be integrated with the demands of other missions, including SSCs and MTW.

Smaller-Scale Contingencies

Defense Planning Guidance requires planning for a variety of potential SSCs. No two will be the same, and variables include duration, forces required, location, participation of allies and other interested parties, linkage to U.S. national interests, political and military conditions, and resources available. Demands on a specific service can approach the magnitude of effort planned for an MTW, as in Kosovo, while other services may have smaller commitments but for longer duration.

Selective participation in SSC operations can serve a variety of U.S. interests. Swift military action sometimes may be the best way to prevent, contain, or resolve conflict or humanitarian crisis, averting greater effort and increased risk later. Commitment of U.S. military forces represents a significant demonstration of the NCA leadership and interest.[9]

The post-Cold War trend clearly is toward more U.S. involvement in SSCs and more operations of longer duration. One study of the two decades between 1975 and 1995 noted that the highest number of U.S. responses (over 40) was in the last period (1991–95), along with an increased proportion of such responses requiring a longer time to complete (approximately one-third extended beyond 12 months in duration).[10] Data to facilitate review of the various issues (such as short- and long-term operating costs, forces and skills required, and the contributions of other nations and organizations) are not readily available. The wide variety of unique criteria and circumstances posed by each SSC compounds the challenges of understanding their impact. For example, one service database has listed 200 SSCs of varying size and duration, while a contractor has listed over 500.[11] A DOD report to Congress submitted in March 1999 reported approximately 50 named major overseas SSCs since the Gulf War.[12] The reporting criterion was the deployment of 500 or more U.S. Armed Forces personnel. These SSCs are summarized in table 10–2. This summary does not include some important recent SSCs, such as Operation *Allied Force* in Kosovo; unnamed operations (such as the two-carrier battle group deployment to Taiwan in March

1996 in response to Chinese force movements and missile firings); domestic support operations, to include disaster relief; or force protection, counterdrug, and counterterrorism operations that have not met the deployment criteria of 500 or more military personnel.

Points of Friction: Can Today's Force Structure and Resources Continue to Meet the Demands?

The U.S. military is having difficulty meeting its wide variety of operational and programmatic requirements, despite a significant DOD budget and a large military force. Many demands are competing for people and dollars. Three notable challenges are costs, increasing demands ("doing more with less"), and unavailability of assets.

DOD faces the same challenge as any large organization with people, equipment, and infrastructure: containing the rising costs of doing business. Pressures that generate increasing demands for funding include a dwindling population base (higher recruiting and retention costs); higher operating and technology costs; growing environmental management responsibilities (including hazardous waste cleanup, environmental damage mitigation, and weapons demilitarization); excess infrastructure and aging facilities (such as housing); and higher manpower costs. Although addressing these issues is well beyond the scope of this chapter, higher costs do affect the manpower and resources available for peacetime operations.

Meanwhile, as the pace of operations has quickened, available forces have been reduced substantially. Since the end of the Cold War, DOD has been involved in nearly 100 major commitments of Americans in uniform, both active and Reserve, to almost every corner of the globe. Over the same period, about a third of the military's personnel and budget were eliminated.[13]

Finally, although active conventional forces (particularly those overseas) may be the most visible sign of U.S. military power, they do not constitute the majority of U.S. force structure or resource allocation. Roughly 40 percent of DOD end-strength is associated with institutional missions, such as recruiting, training, acquisition, maintenance, and management. Active component operational end-strength comprises approximately 30 percent, including the significant overseas presence commitment. The remaining 30 percent are RC forces. Over half of the fiscal year (FY) 1999 Total Obligation Authority was associated with institutional requirements, such as research, development, testing, and engineering,

Table 10–2. Summary of Recent Smaller-Scale Contingencies

Contingency Type	Number of Operations (and Location) Reported to Congress	General Duration
Category 1 (vital interest or security imperative)		
Noncombatant Evacuation	9 (Albania, Cambodia/Thailand, Indonesia, 6 African Nations)	Days–weeks
Show of Force	3 (Kuwait, Iraq)	Weeks–months
Limited Strikes[1]	2 (Iraq)	Days–weeks
No-Fly Zone Enforcement	2 (Iraq)	Months–years
Intervention	0	
Peacekeeping and Enforcement	0	
Emergency Operation in Support of Other U.S. Government Agency	1 (Tanzania and Kenya after embassy bombings)	Weeks–months
Category 2 (important national interest)		
Show of Force	0	
Limited Strikes	1 (Bosnia)	Days–weeks
No-Fly Zone Enforcement	2 (Bosnia)	Months–years
Intervention	0	
Peacekeeping and Enforcement	10 (Somalia, Haiti, Sinai, Macedonia, Bosnia, Kosovo)	Months–years
Humanitarian Assistance	0	
Maritime Sanctions	4 (Adriatic Sea)	Months–years
Other Military Support to Civilian Authority	6 (migrant operations, principally involving Cuba)	Weeks–months
Category 3 (humanitarian and other interest)		
Peacekeeping and Enforcement	1 (Somalia)	Weeks–months
Humanitarian Assistance	9 (Bangladesh, Zaire, Rwanda, Iraq, Somalia, Central America)	Weeks–months–years
Maritime Sanctions Enforcement	0	
Other Military Support to Civilian Authority	0	

Source: William S. Cohen, Secretary of Defense, *Report to Congress on U.S. Military Involvement in Major Smaller-Scale Contingencies Since the Persian Gulf War*, March 1999.

[1] Strikes against Sudan and Afghanistan would fit the subcategory of "limited strikes" if they had met the reporting threshold of 500 personnel deployed.

military construction and housing, civilian and retired pay, environment, and health.[14] Thus, a large force and big budget numbers do not guarantee unlimited numbers of deployable personnel and units.

The responsibilities and simultaneous activities that DOD must balance range from its force-generation effort to its current worldwide presence of some 340,000 personnel overseas or afloat in more than 140 countries.[15] U.S. military forces must simultaneously be committed in various peacetime engagement and shaping activities; trained and postured to execute rapidly and to sustain SSC operations; and trained, ready, and available to meet the demanding deployment and operational requirements to fight two overlapping MTWs. Practically speaking, however, only one pool of U.S. military personnel and equipment is available to meet all of these important security requirements. As a result, points of friction have developed in such areas as funding, unit readiness, and the pace of activity, including operations tempo, personnel tempo, and low-density/high-demand (LD/HD) assets. The high demand for forward-deployed and U.S.-based forces has often put the training, resource, and deployment demands of SSCs in competition with readiness for MTW.

Funding

The funding process for contingency operations is problematic. The bulk of SSC costs is financed from within service operation and maintenance (O&M) accounts but is not programmed in advance. Thus, SSC funding is generally reactive and creates two significant problems. First, higher costs from the increased pace of unplanned and unbudgeted operations cause commanders to disrupt programs by robbing O&M training and maintenance accounts to meet up-front funding requirements of SSCs. Second, the reimbursement process allows the potential for funding dissipation from the original programs as well as lost opportunity costs. In other words, by the time the reimbursement occurs, the original program already is behind schedule. Higher repair-parts costs compound this problem, leading to shortages and maintenance backlogs. The end result is a less prepared warfighting force due to lost training opportunities as well as degradation of various operations and maintenance programs. The RC is similarly affected by this funding issue and may even be underutilized as a result of the fiscal uncertainties.[16]

Tempo: Rotation and LD/HD Assets

The first broad tempo issue that the military faces today is that of operational tempo of units, such as the commitment of fighter squadrons and infantry battalions to operational missions or required training. The second is PERSTEMPO of individuals, which is the amount of time military members spend away from home. Tempo is basically a matter of supply and demand for units and personnel, and problems occur when the demand is greater than the available supply. Tempo problems manifest themselves as readiness problems and generally are the effects of deployments on people, equipment, and units, both those deployed and those that stay behind. Senior DOD leadership frequently has expressed concern that in the long term, high tempo rates can erode readiness dangerously across the board.[17]

The demands of engagement and SSCs require significant unit and personnel rotation requirements, which affect a much larger number of personnel and units than only those deployed. Moreover, many types of deployments or SSC operations have common requirements or needs, creating a high demand for certain capabilities and units, some of which are in short supply (LD/HD assets). Extensive deployment of high-demand units and personnel can degrade unit readiness.

Rotation

Military personnel and units need to rotate their responsibilities; one unit cannot be on the front line all the time. The military also has numerous tasks that cannot be accomplished adequately under extended deployments, such as equipment maintenance, developmental training and schooling, personnel reassignments, and some logistics operations. Thus, rotations are essential for units that are forward-deployed on an extended basis, such as naval and Marine forces at sea and air or ground forces in field conditions.

Typically, large-scale rotations have three phases. A preparation and predeployment phase involves organizing and equipping the forces for planned operations, training them, and conducting rehearsals of anticipated missions. The operations phase involves the actual deployment activities, such as training and sustaining the force; these operations can involve lengthy away-from-home periods. The redeployment and recovery phase facilitates personnel actions (reassignments and schools), maintenance and recovery (to include time off), resupply, and a return to general mission training.

Theoretically, this three-phase rotation base calls for only three similar force elements to be committed to a specific operational requirement. However, several factors necessitate a larger number of personnel, equipment, and units to be available to support such rotations. For example, maintenance programs remove equipment for periodic refurbishment or upgrading. Additional forces may be required for operational reasons, such as overlapping coverage as units replace each other, staging and deployment time considerations, and CINC readiness requirements. Additional forces outside the rotation, such as those that help train and deploy others (for example, troops playing the enemy for field exercises and simulations, or the guides and tiedown crews for railcars) also are vital. Personnel and smaller elements may be pulled out of larger units to meet other missions and requirements. Coupled with these factors is the challenge of managing the time that individual soldiers are away from home for training, schooling, SSCs, or other long-duration commitments, such as tours requiring separation from family. In many cases, these activities will preclude availability in rotations. The services have specific policies to manage peacetime engagement and SSC deployments to help to build more predictability and control over units and personnel and to address the unique operational requirements of each service. But the practical lesson of long-duration commitments is that three similar force (and personnel) elements reflecting only what is actually deployed are insufficient.

In general, four or five of a specific asset or unit are necessary for each element committed. For example, the Navy currently requires 12 aircraft carriers to ensure that 3 are consistently forward-deployed under Naval Global Force Military Policy.[18] The Marine Corps has a similar rotation deployment program for its expeditionary units. The Air Force uses four to five fighters for each one deployed under an expeditionary concept that establishes a rotational AEF assignment for contingency operations support.[19] The Army is not designed as a rotational force and does not rotate its combat divisions; instead, it rotates forces below the division level by crafting tailored deployment packages from its active and Reserve components.

Rotating units also creates a turbulence problem. Several subordinate units can suffer significant personnel losses as the parent unit seeks to deploy a stable force from which personnel will not have to depart in mid-rotation (for such things as reassignment, retirement, or separation) or be forced into back-to-back extended deployments (such as using personnel recently stationed in Korea or Bosnia). Tailoring forces for a specific SSC

also may lower the readiness of subordinate elements that lose a support unit or capability important to its internal operations and training. The end result is that one or two similar units might be significantly degraded to make a third unit deployable.[20]

LD/HD Assets

Scarce assets with unique mission capabilities frequently are desired to support CINC warfighting requirements and SSCs. Joint Staff Global Military Force Policy currently lists 23 LD/HD assets to help manage the impact of sustained high operations tempo, balance CINC requirements against available resources, and preserve a surge capability for crisis and contingency response. Current LD/HD assets grouped by unique mission capabilities are shown in table 10–3.

Other units also can be in high demand to meet operational requirements. Logistical and medical units, communications elements, and lightly armed ground units (such as military police, engineer, air traffic control, airfield security, and light infantry) typically are in high demand for force protection and to sustain air and ground operations in missions such as humanitarian assistance and peacekeeping.[21] Support units can be called upon to provide area coverage for deployed forces of all services as well as forces of other nations and civilians. Some SSCs also make high demands on specific types of capabilities.

Table 10–3. Low Density/High Demand Assets

Capability Being Managed	Number of Systems Affected
Reconnaissance/Battle Management Assets	8 platforms or systems such as Airborne Warning and Control System, Airborne Battlefield Command and Control Center, Joint Surveillance, Target Attack System, and both piloted and unmanned aerial reconnaissance platforms
Electronic Combat Aircraft	2 platforms
Special Operations Forces	9 types of units/equipment; includes a Civil Affairs Battalion, 7 Special Operations Units (helicopter and fixed wing aircraft), and Sea-Air-Land (SEAL) Team delivery vehicle task units
Patriot Air Defense	All active Patriot batteries and battalions
Rescue Aircraft	2 platforms
Chemical/Biological Defense	2 units (Chemical Company and Technical Escort Unit)

Source: Derived from Joint Staff Global Military Force Policy Orientation Briefing, September 20, 2000.

For example, current no-fly zone enforcement has placed higher demands on specific types of fighters and support aircraft. Humanitarian operations may require significant airlift, and the demand may change over time. For example, humanitarian operations initially may call for significant naval or air transport and later for larger ground force operations. Peace enforcement may begin with expeditionary air and ground forces and evolve to more permanent armored or light forces with larger force protection and logistical support requirements.

Warfighting Readiness

Beyond the basic wearing out of personnel and equipment through tempo, other adverse effects can occur as SSCs conflict with efforts to keep potent military forces postured for rapid, high-end combat operations. First, many individual and unit combat skills are perishable; when they are not practiced routinely, proficiency will degrade. For example, infantry units must practice assaulting a bunker, gun crews must practice acquiring targets and firing weapons, and combat pilots must practice air-to-air combat and ordnance delivery. Timing, teamwork, and skill are essential in most warfighting tasks. Generally, a train-up period is essential when units are being prepared for operational deployments. The loss of training opportunities because of SSCs can degrade unit readiness.[22]

Moreover, U.S. forces must be able to transition from a posture of global engagement—that is, from substantial levels of peacetime engagement overseas as well as multiple concurrent SSC operations—to fighting a major theater war.[23] With much of the U.S. strategic sea- and airlift based in the United States, linkup and redeployment of units in an overseas SSC could be extremely complicated. Synchronizing the disengagement or replacement of SSC units as well as their recovery, retraining, and recommitment stresses and complicates operations at all levels. It also affects equipment arrival times in theater.

Major Peacetime Challenge: SSCs

SSCs and readiness for major theater warfighting are likely to continue generating points of friction for the military. These requirements of U.S. defense strategy must be integrated into other imperatives, such as transformation, strategic nuclear forces and deterrence, and homeland security. In chapter 5, alternative defense strategies reflect possible broad approaches to the roles and emphasis of peacetime operations in national security strategy. The Bush administration will face the challenge of meeting the demands of whatever strategy it pursues with a finite force

structure and capability. Unless DOD chooses to accept the level of friction generated by current force structure and requirements, it has two choices: reduce the demand for forces and commitments, or increase the availability or supply of forces.

Overall, SSCs generate the most problematic levels of unpredictability, turbulence, and tempo. However, this problem does not exist in a vacuum. The primacy of MTW readiness in current U.S. strategy, coupled with a robust peacetime engagement and overseas presence effort, are key components of the equation for which the United States has but one military force. Thus, SSCs represent a significant category of military effort frequently linked to vital or important national interests. Redefining what is important is the quickest way to divest SSC commitments. On the other hand, a future with continuing high commitment to SSCs may signal a need to better adjust military structure and policies to accomplish SSCs.

Convincing allies to carry significantly more of the SSC burden in this era of declining defense resources, particularly when vital and important U.S. interests are at stake, may prove daunting. "Just saying no" may not be an option, and we must not limit U.S. ability to act unilaterally. Today's posture of engagement and force structure often can absorb short-duration SSCs of vital interest without major difficulty (noncombatant evacuations and strikes, for example), although the cumulative effect of numerous short-duration activities still can affect training, costs, and turbulence. Longer-duration SSCs appear to pose the greatest near-term challenge. These operations impose substantial rotational requirements that significantly stress much more than the committed force.

Making Choices about SSCs

The NCA ultimately decides to commit U.S. military forces to SSCs. Analyzing the military's recent experience with SSCs suggests how much flexibility the Bush administration may have—or may choose to create—with regard to SSC decisions. This analysis also can provide insight on potential impacts for the military of the SSC choices made by the National Command Authorities.

Category 1 SSCs are those linked to vital U.S. interests or to highly compelling security imperatives such as the lives of U.S. citizens or maintaining stability in a key region (see table 10–2). These SSCs appear uniformly nondiscretionary and unavoidable under today's perspective of what is vitally important.

Category 2 SSCs are not explicitly linked to vital U.S. interests, but they may involve important interests, such as contributing to coalition or

alliance security objectives. Decisions about these SSCs are likely to be difficult for the NCA, and the predominant considerations will be political, not military. However, this is the most fertile category for reducing costs and tempo.

Category 3 SSCs that are not linked to vital or important U.S. interests afford the NCA a higher degree of discretion with regard to military involvement. However, these SSCs often have humanitarian implications and potentially high media interest. Thus, a political price may have to be paid for avoiding Category 3 SSCs.

Whether more selective policy regarding U.S. military participation in SSCs would significantly reduce operational commitments is uncertain. The most recent DOD experience, as reported to Congress in March 1999, reveals that over 80 percent of the reported SSCs were linked to Categories 1 and 2, with one-third of them vital (Category 1). Thus, substantial reduction in SSC participation appears unachievable without a new definition of what constitutes *important* national security interests.

Also unclear is whether more selective participation would result in a major reduction in tempo. Long-term peacetime engagement does pose challenges for the services, but they are fairly predictable and can be managed. Forward-deployed forces or specific deployments of available forces often can absorb short-duration SSCs. Long-duration SSC operations are the ones that create demand for rotations and prolonged higher usage of equipment. Assuming rotations for SSCs are needed for durations greater than 5 months, the 1999 DOD report reveals that over one-half of the named long-duration SSCs support either a vital or an important national interest (this was still true of every current operation as of late 2000). Thus, unless these operations are avoided or curtailed, tempo will remain high.

Nor is it clear that more selective participation in SSCs would result in a substantial cost savings. From FY91 through FY99, DOD has spent over $21 billion on various contingency operations (not counting Yugoslavia and recent air operations in Iraq).[24] This figure probably does not account for a myriad of other costs and impacts, nor do these costs reflect the significant second-order effects of troop and equipment rotations, such as turbulence. However, just over one-quarter of all costs appear unavoidable (linked to vital interests in Category 1); an additional 57 percent of funding is linked to important national interests (Category 2). Less than 15 percent of all contingency funding appears to be clearly avoidable under Category 3. It should be noted that the costs for Bosnia

and Iraq—two long-duration operations with significant force structure requirements—dominate the spending (roughly 75 percent). Unless long-duration operations are avoided or curtailed, notable cost savings are doubtful. Even then, the percentage of the DOD operating budget affected would be very small.

Options for Forces and Commitments in SSCs: Reducing Demand or Increasing Supply

Options to address the points of friction generated by SSCs are offered as examples of how to reduce the demand for forces and commitments in SSCs or to increase the supply. Demand could be reduced by:

- Changing the criteria for intervention or participation in SSCs;
- Increasing the use of civilian contractors, non-DOD U.S. Government agencies, and nongovernmental organizations;
- Limiting SSC commitments based on a preset force ceiling;
- Reducing force commitments to long-duration SSCs based on revised operational concepts or standards of performance; or
- Reducing level of engagement overseas.

Supply could be increased by:

- Resolving U.S. force structure imbalances and inadequacies to enhance military capability for SSCs;
- Implementing new force management and deployment initiatives;
- Establishing a dedicated SSC force; or
- Establishing a new funding mechanism for SSC operations.

Changing Criteria for Intervention or Participation in SSCs

The United States has several particular comparative advantages over other friendly nations. For example, U.S. strategic lift, electronic jamming and reconnaissance, and communications capabilities often are cited as superior to those of its allies.[25] The Armed Forces arguably also have a comparative advantage in the planning and execution of complex military operations given their command and control technologies and training. However, exploiting such an advantage would generate expectations of a leadership role. Using comparative advantages as the basis for selecting commitments to SSCs, the United States can leverage the strengths of allies to pursue common interests. Through coordination with key allies (which may require negotiations about what U.S. comparative advantages are and what capabilities allies are willing to supply), the United States could reduce stress on other

warfighting capabilities, such as combat aircraft and ground forces. Implicit in this policy is greater and more predictable participation in SSCs by allies and other interested nations.

A key component of this policy is identification of U.S. capabilities that are comparative advantages for the Nation. Two recent operations can serve as a departure point for analysis. Under NATO in Operation *Allied Force*, vital U.S. capabilities included strategic lift and deployment, intelligence collection and reconnaissance, and secure long-range communications. For UN operations in East Timor, the United States provided airlift, logistics, command and control, communications, and intelligence support.[26]

This policy option would require a climate of bilateral or multilateral understanding with key allies regarding this new burdensharing approach to SSCs. It also would require a U.S. commitment to plan and to conduct multinational training for likely SSCs and to ensure interoperability with American assets as well as enhance the performance of others.

This policy could improve the predictability, limits, and focus of U.S. military resource requirements in SSCs. It also could substantially reduce tempo and cost if it could eliminate extended commitment of combat air and ground forces in peacekeeping operations and other resource-intensive environments.

This policy might fail to meet alliance or coalition expectations for full partner risk-sharing and commitment. It could undermine the spirit of cooperation needed to execute SSCs successfully, and it also might require greater U.S. resource commitments for those comparative advantages that we intend to employ (which often are already LD/HD assets). Pursuing this policy could have the unintended consequence of encouraging growth in this existing capability gap with allies. A greater commitment of U.S. military resources might be necessary to reinforce the training and capability of allies. A final policy challenge would be the complexity that it might pose for unilateral or timely action when a predominantly U.S. interest is at stake. The greater reliance on alliance participation requires a level of collaboration, consensus, and policy adherence that could limit U.S. flexibility and slow response to crisis. In the end, the complexities of implementing this policy are significant and depend greatly on the expectations, actions, and capabilities of U.S. allies.

Increasing Use of Contractors, Non-DOD Agencies, and NGOs

SSCs can involve the use of labor-intensive logistics, engineering, and communications support activities, frequently for long periods of time. These same capabilities often are required to maintain the combat

readiness of today's deployed forces or are found in greater numbers in the Reserve components. Divesting these support activities through contracting or commitment of non-DOD or NGO capabilities would free critical LD/HD units and other frequently deployed capabilities from the stresses of SSC operations. Contractors already are an important support mechanism for the U.S. military, and precedents exist for successful contractor support during deployments and even conflict. Similarly, NGOs and non-DOD organizations can fill an important role in the management and execution of many humanitarian efforts around the world. Implicit in this policy is greater and more predictable participation by non-DOD organizations that traditionally have not assumed a highly assertive role.

This policy would involve identification of specific competencies that reside in non-DOD and NGO groups. This list may closely track current functions of various logistical units today, such as feeding, housing, engineering, transportation and storage, fuel support, water production and distribution, medical care, sanitation, communications, police and other civil affairs, and psychological operations. The option would require contractor capability to execute desired missions and tasks rapidly, with a prearranged funding strategy to facilitate contract execution without disruption of existing defense funding and programs. It would require an interagency strategy to build up needed expeditionary capabilities of non-DOD agencies, including gaining necessary support and funding from Congress; to establish interagency agreements (and funding) for responsibilities assumed by non-DOD agencies (such as the Department of State, the U.S. Agency for International Development, and others); to coordinate implementation of contracting mechanisms with allies and other international organizations; and to pursue informal agreements and commitments with NGOs and other international organizations to ensure coordinated and timely support in the conduct of SSCs.

This policy could reduce U.S. military participation in SSC commitments significantly, particularly for logistics and support units. The highest payoff would occur if military support forces were not committed beyond the first rotation of long-duration SSCs. Such a policy also facilitates quicker transition of SSC operations from military to civilian control and creates a more effective effort overall because of an institutionalized approach for integrating non-military capabilities into planning and execution. A premise of this policy is that other organizations can achieve the responsiveness and agility normally provided by U.S. military logistics and support organizations.

Several circumstances could limit full implementation of this policy. First, the policy would require robust and stable funding to ensure that contractor capability is developed and sustained over time. This may be difficult to achieve if SSCs are unpredictable or funding support is erratic. At the same time, higher costs and slower support could result if contract mechanisms are unfavorable or if the contractor is unable to mobilize rapidly. Should an unstable or hostile threat environment emerge, degraded contractor effectiveness could pose new challenges and risks for supporting U.S. forces. A current limitation is the general lack of expeditionary capability within most non-DOD agencies. For optimum implementation of this policy, the interagency process must build effective and responsive teams across both organizational and international boundaries, particularly with regard to loosely structured groups. Because NGOs often prefer to retain their independence in operations, special collaboration between the U.S. government, NGOs, and those military and non-military organizations they work alongside may be required.

Limiting SSC Commitments

Creating a top line for the level of commitment to nonvital SSCs would set a predictable requirement for military planners to meet. A policy might limit the number of these SSCs conducted simultaneously, the length of the operations, or the cumulative size of U.S. forces that could be committed at one time. These or other efforts to tighten criteria for participation in nonvital SSCs could make that process more selective. The policy also could assist planners in determining force structure surge requirements and balancing resources for SSCs against those for major theater warfighting. Implicit in this policy are the ability to define a military force that is sufficient for nonvital SSCs and the willingness to turn away requests that exceed it.

A key component of this policy is specific ceilings on naval, air, and ground forces that would be deployed at any one time to nonvital SSCs. For example, a planning ceiling of one long-duration or two simultaneous short-duration operations represents a modest yet visible commitment of U.S. forces to nonvital SSCs. Historical data and modeling insights on the anticipated levels of SSC forces would have to be integrated into development of these ceilings. This option also would require an interagency implementation strategy to address the concerns of allies, international organizations, and affected parties.

This policy could significantly improve the predictability of nonvital SSC obligations and reduce overall U.S. military SSC commitments. It

would establish tempo and readiness impacts as an up-front consideration to guard against unanticipated consequences of nonvital SSC involvement. Cost and tempo savings would be achieved based on the ceilings ultimately established. This policy could be expected to generate a rigorous analysis for each SSC commitment under consideration.

Rigid SSC ceilings could, however, cause several undesirable conditions. First, they could result in unwarranted abstention, should policymakers choose to avoid one SSC believing another more important nonvital contingency might come along. Second, a larger force package requirement could result in overcommitment of one service's forces beyond its specified ceiling. Since no two SSCs are alike, inflexible criteria may be problematic. DOD must acknowledge that decisions to conduct nonvital SSCs are ultimately political, not military. The distinction between vital and nonvital may be difficult to establish and to sustain. If forces are structured to this policy and the ceilings are not observed, the tempo and readiness impacts could be even more serious than today.

Reducing Force Commitments

If U.S. involvement in long-duration SSCs is unavoidable, a deliberate strategy to reduce the cost of doing business in these operations might reduce current stresses. For example, innovative strategies for patrolling no-fly zones and maintaining ground force presence may be possible. By deliberately lessening expectations, we also may be able to reduce commitments to SSCs. Implicit in this policy is a willingness to exploit new concepts and enabling technologies as well as possibly revising the definition of success in the execution of SSCs.

The key policy component would be those operational concepts, capabilities, and policies that reduce military commitments in the employment of naval, air, and ground forces in specific long-duration SSCs. For example, a new conceptual approach for no-fly zone and maritime sanctions operations could include reducing platform requirements (leveraging unmanned systems and sensors), surveillance through more random and limited activities (with substantially reduced platform requirements), and an unambiguous retaliation/strike policy to deter cheating. Similarly, a concept for ground force peacekeeping operations could include monitoring and surveillance through sensor webs of technologies (platform- and ground-based radar, video, and acoustical systems) linked to dispersed forces, both positioned and roaming. Response to violations might trigger rapid application of ground forces, containment barriers (to include nonlethal technologies), or precision fires through

prepositioned or loitering assets. This policy also would involve integration of operational concepts into technology and doctrine development programs and alliance interoperability doctrine.

Using such concepts, this policy could reduce significantly the commitment of U.S. military forces in selected SSCs; the focus is assumed to be long-duration operations. Efforts to pursue this policy could lead to new and effective operational concepts for broader application.

This policy has programmatic implications and possible operational shortcomings. It requires DOD commitment to the development and fielding of new concepts and technologies with uncertain timelines and uncertain utility, should alternative concepts prove to be less effective or more susceptible to challenges by opposing forces. From a pragmatic standpoint, unavoidable aspects of some SSCs (such as the manpower-intensive interactions between military and civilians in the Balkans today) would not be resolved under this approach.

Reducing Overseas Engagement

By deliberately scaling back expectations and requirements for engagement, we could reduce the demand for peacetime deployments of forces from both the active and Reserve components. This would facilitate a reduction in tempo and encourage events that reinforce only essential warfighting and deterrence requirements. Emphasis would be on using in-place forces to minimize deployments from outside the CINC area of responsibility. Standardizing and streamlining initiatives of the regional CINCs may be necessary. Implicit in this policy is a willingness to reduce opportunities to interact and to influence the political-military institutions and militaries of other countries.

This policy would include developing guidance for each regional CINC regarding the highest-priority high payoff engagement activities to be supported within available resources. It should develop programs to use civilians or contractors for selected engagement activities that currently occupy military personnel and resources. The policy also requires a revised strategy for forward presence and deployment policies consistent with a reduced level of engagement. It may generate a reduced training events calendar, concentrating on the accomplishment of essential alliance or coalition security and interoperability tasks; reduced force packages for engagement, such as streamlined carrier battle groups or other forward-deployed combat forces, including substitutions for high-cost platforms and units; and shortened presence and engagement missions (visits and exercises).

The principal advantages of this policy are an anticipated reduction in deployment commitments for engagement activities and a more controlled operating tempo in the planning and conduct of these events. It would facilitate more focused and productive engagements because officials will have more time to plan each engagement if there are fewer of them. Actual benefits would be determined by the extent to which engagement plans and operational commitments are revised.

This policy's potential benefit might be its most significant disadvantage: a reduced level of interaction and interoperability with military partners and allies. Such a policy provides less opportunity to influence, monitor, and otherwise shape events. It also could lead to degraded alliance capabilities and more interoperability shortfalls. The U.S. ability to respond to crises could be significantly hampered, particularly if this policy led to smaller or less capable forward-deployed forces, but careful planning could mitigate this drawback.

Resolving Force Imbalances and Inadequacies

This policy, rather than reducing demand, seeks to increase supply. In the past, SSCs were often considered lesser-included tasks accomplished by a force structure sized to conduct two near-simultaneous MTWs. These SSCs can be long and labor-intensive, taxing certain operational and support forces and affecting overall unit readiness. Building more units and capabilities currently identified as LD/HD or in constant need could relieve the stress of unit rotation requirements and posture the U.S. military more effectively across the full spectrum of possible operations. Reductions in less-utilized units also should be considered. Such force structure adjustments must be based on clear criteria for SSC involvement. Tailoring or consolidation of specialized skills and units drawn from larger support organizations may be necessary to avoid the incremental commitment of a variety of personnel and subunits and the subsequent erosion of overall capability. Both active and Reserve structure adjustments are envisioned, since the latter already contributes substantial forces to many SSC operations. Implicit in this policy is the willingness to make specific force planning and resource allocation decisions based principally on the requirements of SSCs.

An essential component of this policy is a program to nominate, assess, and create or restructure both active and RC units and capabilities to facilitate SSC operations. Consideration should be given to Global Military Force Policy LD/HD assets; Army and Air Force high-use combat, logistics support, and command and control elements; Navy medical

and construction capabilities; and Army civil affairs and psychological operations units.[27]

For this policy, modular SSC logistics support forces may be beneficial. Common support elements for transportation, general repair, supply, fuel, sanitation, personnel and ordnance disposal capabilities may be particularly helpful to plan and to optimize ground force operations.

Funding to support acquisition and force structure changes (including impacts on personnel programs) also will be required. Until specific types and quantities of forces and capabilities are identified, however, projecting potential costs of this initiative is difficult.

The principal advantage of this policy is that it would reduce current stresses on U.S. military operating forces conducting SSCs, particularly LD/HD units and capabilities. In short, CINCs would have more of what they are asking for, and tempo for these forces would be more manageable. In many respects, U.S. military forces would be optimized for the operations they are most likely to face.

This policy has two notable implications. First, the costs to build and to sustain new forces or capabilities for SSC requirements could be substantial. Second, care must be taken to ensure that high-end combat forces necessary for MTWs are not excessively affected by any force restructuring.

New Management and Deployment Initiatives

A second policy to increase supply addresses force management policies and the stationing and commitment of forces to engagement and major theater warfighting requirements. New rotation policies, stationing approaches, or other practices may mitigate constraints on participation in SSCs. For example, a new policy on stationing forces and equipment abroad could reduce travel and separation times. New rotation policies could reduce turbulence and improve predictability in deployments. Implicit in this policy is the willingness to pursue substantial changes to longstanding force management practices.

Four areas of this policy need to be developed. The first is new concepts for overseas stationing of forces and equipment that reduce deployment requirements and improve the ability for broader-based SSC capability. For example, permanent stationing facilitates longer tours of duty in lieu of continuous temporary rotations of shorter duration. Personnel deployed in one year could be cut 75 percent if a rotational deployment of 100 people every 90 days were replaced with 100 people on one-year tours. Analysis of permanent stationing aimed at reducing short-deployment requirements should include Southwest Asia (all types

of forces), LD/HD units and capabilities (globally, all services), Southeast Asia (principally maritime), and the Balkans (ground and air forces). (U.S. overseas presence issues are discussed in more detail in chapter 9.)

Second, new concepts for force management also may yield greater efficiencies. Examples include standardized design and rotation policy for Army operational forces, standardized "away from home" deployment time for all services, or naval rotation practices that retain deployment of major platforms and assets forward and rotate personnel to them.

Third, new policy on personnel management during overseas deployments may better mitigate turbulence and rotations. Changes might include additional unaccompanied tours (those in which a servicemember is separated from family) in more forward-deployed locations or in long-duration SSCs, as well as pay differentials for those volunteering for tour extensions.

Fourth, greater availability and use of RCs for engagement and SSC missions should be considered. The manpower, skills, and equipment of Guard and Reserve forces increasingly are being tapped to fulfill a variety of roles, such as providing military support to civilian authorities, conducting and supporting peacetime engagement and SSC operations, and preparing for mobilization and MTW.[28] The *Reserve Component Employment Study 2005* already is seeking ways to enhance RC participation in SSCs.[29] Expanded RC activity should be explored in such areas as providing homeland defense capabilities (for example, consequence management, protection of critical U.S. infrastructure, and national missile defense operations); participation in SSCs through such initiatives as providing additional LD/HD capabilities and greater support to sustained operations in Bosnia; and revision of RC roles in MTW plans.[30]

This policy's principal advantage is more efficient disposition and employment of forces, which should reduce tempo while enhancing readiness. The short-term impacts of implementing various parts of this policy could be substantial. Changes in basing and personnel management overseas would be expensive. Such changes also would require host-country support, which might or might not be forthcoming. Lower readiness could occur if rotation policies that optimize cost savings result in less training time or adversely affect recruitment and retention. Approaches that expand use of the RC in active operations also may degrade RC recruitment and retention.

Establishing a Dedicated Force

A select force focused only on SSCs would minimize training and proficiency issues that occur when cycling wartime-postured units into such missions. Streamlining of equipment and doctrine also could be accomplished. These specialty units could establish a valuable base of expertise for meeting important SSCs undertaken by the United States. Once that force is fully committed, additional contingencies generally would not be undertaken. Without the threat of unlimited SSC obligations, the rest of the force could concentrate on key engagement and warfighting requirements. Implicit in this policy is a willingness to establish and to maintain specialty units and priorities not oriented toward MTW missions.

The major component of this policy is a defined mission set and size for the SSC force. For example, a specialty SSC force might be defined in terms of general functions that it will perform. Ground forces might include a combat and force protection force; a logistics force capable of sustaining large-scale multinational area support operations; a command, control, communications, and intelligence force; and a civil-military assistance force with engineers, military police, and medical capability. Air forces might include a strategic lift force; combat and support aircraft; and a reconnaissance/intelligence force (with key command, control, communications, computers, intelligence, surveillance, and reconnaissance platforms). Naval and Marine forces might include a maritime operations force and an expeditionary force. Analysis should include both active and Reserve components. Also needed are a program and funding to establish and to sustain this force, and interagency-approved policy and criteria for its commitment. This policy's principal advantage would be a viable, dedicated SSC force with adequate resources, available to meet policy needs. It also would provide predictable allocation of force and workload between SSCs and major theater warfighting requirements.

This policy has several significant challenges. Each contingency is different and would dictate equipment and personnel requirements. SSCs also can change significantly over time, from combat-capable forced-entry operations to logistical support. The cost of maintaining a robust, dedicated SSC force could be substantial. A tailored SSC force could have a potentially diminished role in high-end MTWs, thus posing additional overall risk for the military force structure. The policy also might introduce the need for specialized recruitment, retention,

and personnel management considerations. Reserve component linkages and training strategies would have to be re-examined. Specialized forces built to ease the burden on the remainder of the military must not be overcommitted. Even a small force would require a large rotation base. This option would not be feasible unless the United States was willing either to build a much larger force structure or to reduce its warfighting requirements significantly.

A New Funding Mechanism

Funding procedures for contingency operations could be improved, and the practice of diverting funds from other critical accounts to support SSCs could be avoided. Currently, DOD budgets for the cost of ongoing contingency operations, and Congress appropriates funds for these operations to service personnel accounts and the Overseas Contingency Operations Transfer Fund. DOD then transfers funds to the components' appropriation accounts as operations unfold during the year. New, expanded, or otherwise unfunded operations force DOD components to borrow funds from other budgeted activities. To minimize degradation of readiness programs, lower-priority O&M and investment accounts are the primary source of borrowed funds. If supplemental appropriations or reprogramming of funds does not occur, the components must absorb the costs within regular accounts.[31] Providing stable funding levels and processes can eliminate the need for diversions and reprogramming. This would improve DOD ability to provide timely support for current and potential contingency operations.

This policy requires budgetary processes and procedures that ensure full and independent funding of ongoing SSC operations, without the need to borrow from other accounts. A dedicated prior-year appropriation of funding would be necessary to support new SSC requirements until the operation could be integrated into the budget. It would require processes and procedures to account for any uncommitted funding.

This policy could improve current budgetary and funding practices for SSCs. It could eliminate uncertainties with respect to supporting future operations and protect operations, maintenance, and investment accounts from raids to support SSC needs. Few shortfalls can be found in this policy beyond the challenges that it poses politically. Advance funding of SSCs could hinder the level of appropriations discretion that Congress now has. A second concern may be the opportunity costs lost through the withholding of funds for SSCs that never take place.

Conclusion

Not all SSCs are the same, and U.S. experience since the end of the Cold War reveals that the NCA determination of vital and important national interests can dramatically affect the level of SSC commitment and the resulting tempo, cost, and readiness impacts for the military. Redefining what is important is the quickest way to divest SSC commitments, but a continuing high commitment to SSCs may signal a need to adjust military structures and policies to accomplish them. The next QDR has several options to consider, either to reduce the demand for U.S. military forces and commitments for SSCs or to increase the supply of such forces. Each option has advantages and disadvantages, and each merits additional analysis. In the end, the military is likely to achieve its highest payoff by investing in forces and capabilities that are sufficiently flexible and adaptable to accomplish a wide range of missions across the full spectrum of operations.

Notes

[1] Joint Publication 1–02 defines *peace operations* as a broad term that encompasses peacekeeping operations and peace enforcement operations conducted in support of diplomatic efforts to establish and to maintain peace. The term *peacetime operations* is intended to capture significant DOD military activities short of major theater war, a far broader scope of activity.

[2] Estimates were derived from various service sources and do not include contractor support or Reserve component (RC) forces. Quantifying these resources is difficult, and estimates vary. For example, Army Initiatives Group, *BG Smartbook* (Washington, DC: Headquarters, Department of the Army, October 1999) notes that the fiscal year 2000 active component force structure end-strength has 63 percent in operational or Modified Table of Organization and Equipment units with the remainder in other accounts. An Air Force briefing on the Aerospace Expeditionary Force (July 26, 1999) notes that 36 percent of its active force is considered nondeploying, involved in space, missile, acquisition, training, or research and development activities. Another author asserts that about half of the military's active duty forces are deployable; see Steven M. Kosiak, *Military Readiness: Good News, Bad News and Questions about the Future* (Washington, DC: Center for Strategic and Budgetary Assessment, September 24, 1998).

[3] William S. Cohen, Secretary of Defense, *Annual Report to the President and the Congress, 2000;* see chapter 5 for a detailed review of conventional forces. Stocks also are prepositioned in Europe, Korea/Japan, and afloat. Richard L. Kugler, *Changes Ahead: Future Directions for the U.S. Overseas Military Presence* (Santa Monica, CA: RAND, 1998), provides an excellent review of current U.S. overseas presence.

[4] See *A National Security Strategy for a New Century* (Washington, DC: The White House, December 1999), 11, for discussion of military activities related to engagement and overseas presence. For a review of perspectives on the value of some engagement activities, see Miles A. Pomper, "Battle Lines Keep Shifting Over Foreign Military Training," *Congressional Quarterly Weekly,* January 29, 2000. Reasons for the United States to remain actively engaged around the world are offered by Edward C. Luck, "The Case for Engagement: American Interests in UN Peace Operations," in Donald C.F. Daniel and Bradd C. Hayes, eds., *Beyond Traditional Peacekeeping* (New York: St. Martin's Press, 1995).

[5] Cohen, *Annual Report to the President and the Congress;* see chapter 6 for a detailed description of strategic nuclear forces and nuclear agreements. Figures cited are from FY00 and exclude 2 modified fleet ballistic missile submarines accountable under the Strategic Arms Reduction Treaty (START) and 93 B–1 bombers accountable under START I now devoted entirely to conventional

missions. The potential cost is nearly an additional $8.3 billion total through 2010 if the Russian Duma fails to ratify START II and the United States invests in strategic forces to sustain START I levels (buying D5 missiles, refueling and modernizing four Trident submarines, and manufacturing more Peacekeeper missiles). See Congressional Budget Office analysis of budget function 050 (National Defense) spending and revenue options, item 050–3–04, March 2000 <www.cbo.gov>.

[6] See David L. Grange and Rodney L. Johnson, "Forgotten Mission: Military Support to the Nation," *Joint Force Quarterly,* Spring 1997.

[7] The Secretary of the Army fulfills the role of DOD Executive Agent for Military Support to Civil Authorities. The 2000 *Annual Report to the President and the Congress* notes that the Guard and Reserve are uniquely suited for this mission because of their country-wide presence (spanning nearly 4,000 communities) and well-established links to the civilian first-responders in communities, counties, and states.

[8] See Grange and Johnson, "Forgotten Mission," 110–111.

[9] A useful review of the contemporary debate over conditions for military intervention is found in Richard N. Haass, *Intervention: The Use of American Military Force in the Post-Cold War World* (Washington, DC: Carnegie Endowment, 1994). For examples of SSC descriptions, see *Report of the Quadrennial Defense Review,* May 1997; William S. Cohen, Secretary of Defense, *Report to Congress on U.S. Military Involvement in Major Smaller-Scale Contingencies Since the Persian Gulf War,* March 1999; *Defense Planning Guidance* Update FY 2002–2007; and Joint Publication 3–0, *Doctrine for Joint Operations,* February 1, 1995 (discussion of Operations Other Than War).

[10] See Science Applications International Corporation, *Historical Analysis of U.S. Military Responses: 1975–1995* (Contract #DASW01–95–D–0077 for HQDA, ODCSOPS).

[11] Center for Army Analysis briefing provided by Lieutenant Colonel H.J. Orgeron on December 20, 1999, identified 191 operations; he stated the database was still being updated and has already exceeded 200. A draft study by DFI International identified 552 SSCs in the 1990s.

[12] See Cohen, *Report to Congress on U.S. Military Involvement in Major Smaller-Scale Contingencies Since the Persian Gulf War.*

[13] Rates of deployment vary by service. For example, Army deployments increased 300 percent since 1990; Navy ship deployments on any given day are up 52 percent since 1994; and Air Force deployments since 1986 have quadrupled. During these same timeframes, the size of the Army (soldiers and civilians) dropped 40 percent; the number of Navy ships fell 30 percent; and the Air Force lost one-third of its people. Guard and Reserve forces have seen a thirteen-fold increase since 1990 in the number of days on active duty due to the increased deployments. See <www.defenselink.mil> for a useful "DOD 101" briefing that also effectively summarizes the various roles, missions, and activities of the U.S. Armed Forces.

[14] Derived from *Defense Almanac 1999* figures provided by the American Forces Information Service. See <www.defenselink.mil/pubs/almanac>. Aggregations and simplifications were necessary because of the nature of personnel and budget data.

[15] Cited in "DOD 101" briefing, <www.defenselink.mil>.

[16] See discussion of Resource Challenges for the RC Employment, *Reserve Component Employment (RCE) Study 2005,* approved July 14, 1999, 26.

[17] For example, see *Posture Statement* by General Henry H. Shelton, Chairman of the Joint Chiefs of Staff before the 106th Congress, House Armed Services Committee, February 2, 1999.

[18] Traditionally, the Navy has used a 3:1 ratio for deployment rotation of carrier battle groups (CVBGs) and amphibious ready groups (ARGs). Conceptually, one CVBG or ARG is deployed, one is in underway training, and one is in refit/overhaul. However, this formula does not take transit time into consideration, and the Department of the Navy recently has identified specific ratios to maintain groups on station at each of the major deployment hubs. According to these calculations, eight CVBGs or ARGs are required to keep one on station in the Central region (Arabian Gulf/Arabian Sea); six to keep one on station in the Mediterranean; and one to maintain presence in the Far East (since a CVBG is permanently homeported in Japan). See Gregory V. Cox, *Keeping Aircraft Carriers Forward Deployed: Harder than It Seems,* CNA Occasional Paper 196 (Alexandria, VA: Center for Naval Analyses, 2000).

[19] See David E. Thaler and Daniel M. Norton, *Air Force Operations Overseas in Peacetime,* Project Air Force RAND Briefing (Santa Monica, CA: RAND, 1995), 21.

[20] See Tom Donnelly, "One War Too Many," *Jane's Defence Weekly,* December 8, 1999; and Stephen T. Hosmer, Maren Leed, et al., *Bettering the Balance: Large Wars and Small Contingencies,* RAND Issue Paper (Santa Monica, CA: RAND, 1997), for more discussion of turbulence.

[21] Several studies identify other units and capabilities commonly involved in SSCs. Several factors will determine whether they are truly LD/HD or stressed: frequency and duration of employment, number of units available, and service ability to use "substitute" units and capabilities (for example, infantry or engineers performing the traditional tasks of Military Police or transportation units). Predictive models, such as the Center for Army Analysis's Stochastic Analysis of Deployments and Excursions, may also provide insights on potential future needs. For representative analysis of high-use units and capabilities in SSCs, see *RCE Study 2005;* and Bruce R. Pirnie and Corazon M. Francisco, *Assessing Requirements for Peacekeeping, Humanitarian Assistance, and Disaster Relief,* RAND Report MR–951 (Santa Monica, CA: RAND, 1998).

[22] See General Accounting Office, *Report to the Chairman,* Subcommittee on Military Readiness and Management Support, Committee on Armed Services, U.S. Senate, Report GAO/NSIAD–99–69, subject: "Military Operations—Impact of Operations Other Than War on the Services Varies," for a detailed review of the various training and readiness issues surrounding SSCs.

[23] This requirement is noted clearly in security strategy documents such as the QDR 1997 Report, 13.

[24] Costs estimated by the author based on duration and projected activity. Operation *Desert Fox* in Iraq was not included. FY91–FY99 costs of U.S. contingency operations are discussed in Steven M. Kosiak, *After the War: Kosovo Peacekeeping Operations Could Cost U.S. $2–3.5 Billion a Year* (Washington, DC: Center for Strategic and Budgetary Assessments, June 7, 1999).

[25] For example, the October 14, 1999, *Joint Statement on the Kosovo After Action Review* by Secretary Cohen and General Shelton cites disparities between the United States and its allies in precision strike, mobility, and command, control, communications, and intelligence. The commander of U.S. forces in East Timor has described the U.S. role there as providing "force multipliers" such as communications, intelligence, and strategic lift; *Inside The Navy,* December 6, 1999. See also Joseph Fitchett, "Allies Emphasize Need to Prepare for Kosovo-Style Air Wars," *International Herald Tribune,* November 12, 1999.

[26] Stephen Clutter, "U.S. Airlifts Thai Troops for Peacekeeping Operations in East Timor," <okinawa.mcbutler.usmc.mil/currentops/thailift.html>.

[27] See chapter 8 on force structure issues.

[28] Over the past 10 years, the number of days that Guard and Reserve forces have served on active duty has increased thirteen-fold. In 1998 alone, some 235,000 Guards and Reservists of all services deployed overseas for an average of 19 days on various activities such as humanitarian and peacekeeping missions and readiness training. Some 325,000 deployed (for an average of 22 days) in the United States to support domestic priorities, such as counterdrug operations and natural disaster assistance. See the DOD 101 briefing, <www.defenselink.mil> for more information on RC missions and activities.

[29] See *Reserve Component Employment (RCE) Study 2005,* approved July 14, 1999.

[30] For executive summary, see DOD Memorandum, *Final Report of the Reserve Component Employment Study 2005—Action Memorandum, July 15, 1999.* The use of Guards and Reservists does not come without cost, and there are also practical limits on their capability, such as predictable availability of qualified personnel and units; Presidential Selected Reserve Call-up requirements; limited resources to maintain today's total force integration while adjusting to changing or new roles; and the effect of high reserve tempo on recruiting and retention.

[31] A detailed review of contingency operations costs and funding can be found in U.S. Government Accounting Office, Report to the Chairman and Ranking Member, Subcommittee on Defense, Committee on Appropriations, U.S. Senate, *Defense Budget: Fiscal Year 2000 Contingency Operations Costs and Funding,* June 2000.

Chapter Eleven

Modernizing and Transforming U.S. Forces: Alternative Paths to the Force of Tomorrow

by Michael E. O'Hanlon

Due to the excellent performance of American high-technology weapons in the 1991 Persian Gulf War, as well as the phenomenal pace of innovation in the modern computer industry, many defense analysts have posited that a revolution in military affairs is either imminent or already under way. The RMA thesis holds that further advances in precision munitions, real-time data dissemination, and other modern technologies can help transform the nature of future war and with it the size and structure of the U.S. military. RMA proponents believe that military technology, and the resultant potential for radically new types of warfighting tactics and strategies, is advancing at a rate unrivaled since the 1920s through 1940s, when blitzkrieg, aircraft carriers, large-scale amphibious and airborne assault, ballistic missiles, strategic bombing, and nuclear weapons were developed. For most RMA proponents, this set of judgments translates into the belief that the United States should transform its military weaponry, other hardware, organizational constructs, and operational concepts to take proper advantage of what new technologies now make possible—and to make sure that others do not exploit them at U.S. expense.

While in the abstract it is unobjectionable to favor innovation, the prescriptions of some RMA proponents would have major opportunity costs. As the 1997 Quadrennial Defense Review pointed out, and as the Congressionally-mandated National Defense Panel subsequently concluded that same year, pursuing an RMA aggressively would require cutbacks in other areas of defense activity, given likely political and fiscal constraints on defense spending. The United States might need to disengage from military

operations in places like the Balkans to devote more resources to experimentation and investment; it might even need to curtail U.S. abilities to deter or wage war in Korea, the Persian Gulf, the Taiwan Strait, and elsewhere. With another Quadrennial Defense Review looming in 2001, these are not tradeoffs to take lightly. Any RMA transformation strategy needs to be carefully constructed, and the associated benefits and risks assessed.

Increasingly large projections for the federal budget surplus may make it possible for the Pentagon to avoid tough choices—to have its RMA cake while keeping its current force too. However, it seems more likely that tough choices will still be necessary, even if they will not be as difficult as once appeared likely. Keeping the current force of 1.36 million active-duty personnel will probably require an annual real defense spending level $30 billion to $50 billion higher than the 2000 level of $290 billion, even without adding in any extra costs for revolutionary new technology. Moreover, DOD must compete for its share of the federal surplus with domestic programs, tax cuts, and any expansion of federal entitlement programs in areas such as health care. Even if the non-Social Security budget surplus averages $300 billion a year in the coming decade, as currently projected, the Pentagon is unlikely to receive much more than half the amount it would probably need to retain its existing force structure and weapons modernization agenda. (During the 2000 presidential campaign, Governor George Bush promised about a $5 billion real increase in annual defense spending; Vice President Al Gore promised about $9 billion.) Money may not be as tight as in 1997, at the time of the last QDR, but sound defense budget priorities will still be essential.

This chapter focuses on the so-called transformation issue, and most notably on the hardware side of any revolution in military affairs that may be in the offing. Specifically, it develops and assesses two options for future U.S. forces. In doing so, it focuses on the investment or acquisition accounts, including concept development and experimentation, and emphasizes the medium-term time horizon looking roughly 5 to 15 years into the future.

The two options differ in their assumptions about the nature and scope of any incipient revolution in military affairs, the urgency with which U.S. military forces should be transformed, and the total amount of resources that should be directed to acquisition accounts. They take as their point of comparison DOD policy as of mid-2000 reflected in the 1997 QDR and subsequent policy changes. One of the options would emphasize electronics, computers, and communications technologies as well

as basic research and experimentation. The other would reflect a more sweeping transformation philosophy, replacing not only electronics systems, sensors, communications networks, and munitions, but also most military vehicles and major weaponry. The first approach would tend to see innovation as a continuing process; the second would work toward a specific end-state radically different from today's in what would amount to a transformation.

Before developing these options, it is important to examine the concept of transformation, and the hypothesis that a revolution in military affairs is now attainable or under way. The concepts have become so important to the American defense debate that they require clear definitions and critical analysis before influencing any debate about force planning and modernization programs.

The RMA Hypothesis

Is a revolution in military affairs under way or within reach? If so, what is its nature? The answers to these questions are of critical importance for developing a defense transformation strategy—and, in fact, for deciding if there should even be one.

There are many different versions of the contemporary RMA hypothesis. They range from relatively technical military concepts to more sweeping prognostications about radical changes in human society, the global economy, and warfare such as those advanced by Heidi and Alvin Toffler.[1] The following discussion focuses on RMA concepts that are concrete enough to be directly related to mid-term defense planning. It groups them into two main schools of thought and a third category that is an amalgamation of several RMA concepts from various schools that, collectively, amount to the existing DOD plan:

- The C[4]ISR school emphasizes the potential of modern computers, electronics, and related technologies.[2]
- The global reach/global power school is much more sweeping. It envisions radical change across a whole spectrum of military technologies and military organizations, doctrines, and tactics. Although the term was originally coined by the Air Force, it can be (and is here) applied more generally.
- The existing DOD modernization plan as an RMA framework is somewhat confusing, in that its rhetoric far exceeds its substance, but it is an important baseline for comparison.

Within all three main categories, there are individuals who emphasize the opportunities that an incipient RMA might offer the United States,

and others who dwell on opportunities for potential enemies. The global reach/global power school is motivated in large part by the concern that fixed military bases and large armored formations will become increasingly difficult to protect in the years ahead. It holds that the spread of missile, mine, and satellite-reconnaissance technology necessitates that U.S. forces be capable of projecting power from greater distances, outside the range of enemy weaponry, and that they minimize their footprints within combat theaters.[3] The C[4]ISR school, by contrast, is less optimistic about high-technology solutions to the vulnerability problem but holds that, by focusing traditional defense investment dollars on those weapons systems offering the greatest payoff per dollar, more money will be made available for other critical defense and nondefense investments to mitigate the vulnerabilities of not only U.S. combat forces but the American homeland as well.[4] Those investments could range from roll-on/roll-off ships and vertical takeoff airplanes (which would reduce U.S. military dependence on large, fixed infrastructure in overseas theaters), to chemical protection gear, greater counterterrorism efforts, and stockpiles of antibiotics and vaccines against various biological warfare agents.

Before analyzing these alternative notions of a contemporary RMA, however, it is appropriate to subject the RMA hypothesis to critical scrutiny. If the hypothesis that a revolution in military affairs was attainable or under way amounted only to a prediction, it would matter little whether its proponents were proved right. We could view the subject as intellectually interesting but not particularly important and simply wait to find out.

However, as RMA proponents frequently claim, military revolutions are the purposeful creations of people. They are created by a combination of technological breakthrough, institutional adaptation, and warfighting innovation.[5] They are not emergent properties that result accidentally or unconsciously from a cumulative process of technological invention. They ultimately require a major investment of effort and money.

For this reason, the RMA debate matters. If the proponents of the RMA hypothesis are right, it could be dangerous for the United States not to heed their counsel.[6] By contrast, if they are wrong, it could be harmful to the country's security interests to adopt their recommendations, since doing so would divert large amounts of money and attention from other defense priorities.

RMA proponents tend to argue that more budgetary resources should be devoted to innovation—research and development, procurement of new hardware, frequent experiments with new technology—and, to the extent

necessary, less money to military operations, training, and readiness. To free up funds for an RMA transformation strategy, some would reduce U.S. global engagement and reduce the military's deterrent posture.[7] For example, in its 1997 report, the National Defense Panel (NDP) dismissed the current two-war framework as obsolete (without, however, suggesting what should replace it). The NDP also suggested that U.S. military retrenchment from forward presence and peacekeeping operations might be needed simply to free up money to promote the so-called RMA.[8] These suggestions, if adopted, would have important effects on U.S. security policy; and they should not be accepted simply on the basis of vague impressions that an RMA may be achievable. To use the lexicon of current official strategy, articulated in Secretary of Defense William Cohen's 1997 Quadrennial Defense Review, RMA proponents would put more resources into preparing U.S. forces for an uncertain future. Applying a term popularized by the NDP, they support a U.S. military *transformation,* which implies a managed and controlled process, but still a radical one.[9] Assuming a given Pentagon budget level, they would therefore put less emphasis on shaping the future military environment through American military engagement overseas, and on being ready to respond to near-term challenges to U.S. interests by the likes of Saddam Hussein and Kim Jong-Il. The 1997 QDR struck a balance between preparing, shaping, and responding. Therefore, conducted as it was in a period that lacked the rosy budget forecasts we now take for granted, it did not promote an all-out transformation strategy.

This chapter attempts to sketch out the competing transformation visions, and then to assess their relative advantages and drawbacks.

The Electronics or C⁴ISR School

The C⁴ISR school of thought on the RMA focuses fairly narrowly on the potential of modern electronics and computers, the defense-related technologies undergoing by far the most rapid change in the world today. It also tends to be a somewhat cautious and skeptical school of thought.

Many members of this school emphasize the concept of a system of systems, a term popularized by former Vice Chairman of the Joint Chiefs of Staff, Admiral William Owens. (However, Owens himself is now more ambitious in his RMA aspirations than most proponents of this school of thought.[10]) They argue that future warfare will be dominated less by individual weapons platforms and munitions than by real-time data processing and networking that tie U.S. forces together synergistically. Proponents point to the fact that computers have been getting much faster for years. Supercomputer computational power has been increasing by a

factor of ten every 5 years.[11] Personal computers have improved almost as quickly, roughly doubling in speed every 2 years since IBM's personal computer was introduced in 1981.[12] Although the computer's benefits for the economy were unclear for the 1980s and the early 1990s, recent economic evidence suggests that information technology may be largely responsible for the prolonged U.S. economic expansion of the mid to late 1990s. If this effect is real and sustainable, perhaps computers will soon be just as beneficial for military operations.[13]

Trends in computing power, speed, cost, and size have made it possible to put computers on ballistic missiles, fighter jets, and phased-array radars in the last few decades. Further advancements now make it possible to put computing capability on all significant platforms and to network the systems together. This will allow such systems to gather information from many sources, process it in real time, and exchange data rapidly on the battlefield.[14] Automatic target recognition capabilities may finally become useful if trends in processing power continue. In sum, radical progress is under way in command, control, communications, and computers technologies, and the U.S. military should be able to derive great benefits from that progress.

Other RMA proponents who focus principally on the potential of modern-day electronics technologies go further. Convinced that radical improvements are under way not only in computers but also in sensors that gather information, they have invoked the term *dominant battlespace knowledge* (DBK) to describe a future combat environment in which the United States would be able to find promptly and continuously track virtually all important enemy assets within a combat zone, often specified as being 200 nautical miles square (roughly the size of key battlefield areas in a place such as Kuwait or the Korean Peninsula).

As its name suggests, the DBK school is much more bullish and ambitious than the system-of-systems school. It not only presupposes the rapid processing and exchange of information on the battlefield, but also the availability of much better information to process and exchange.[15] In other words, it expects breakthroughs not only in C^4 technologies, organizations, and capabilities, but also in intelligence, surveillance, and reconnaissance, making for a complete C^4ISR revolution in military affairs. As General Ronald Fogelman, a former Chief of Staff of the Air Force, put it before Congress in 1997: "In the first quarter of the 21st century you will be able to find, fix or track, and target—in near realtime—anything of consequence that moves upon or is located on the face of the Earth."[16]

Clearly those who subscribe to the more limited system-of-systems concept understand that sensors will continue to improve. For example, the miniaturization of electronics, on-board information-processing capabilities, global positioning system receivers, and secure, high-data-rate radios now make possible such devices as unmanned aerial vehicles (UAVs), useful in reconnaissance missions. In addition, improvements or innovations in sensors will probably take place in such areas as multispectral imaging and foliage-penetrating radar, which will be important in certain circumstances. Proponents of the system-of-systems concept do not, however, anticipate that sensors will improve so drastically as to make the battlefield transparent.

Whatever their differences of opinion, all of these RMA proponents tend to emphasize defense capabilities within the broad conceptual framework of C4ISR. Some hold out hope that military vehicles and major weapons platforms will also improve radically in the years ahead, but are not sufficiently confident to commit to a wholesale replacement strategy for such equipment. Instead, they prefer prototyping, experimentation, and patience within the realms of weapons platform modernization. Indeed, many see the Pentagon's traditional emphasis on buying large amounts of expensive, major combat equipment as being at cross-purposes with the proper goals of an RMA transformation agenda. They would instead favor more selective and economical modernization of large platforms.[17]

Global Reach/Global Power School

Other RMA schools of thought see no tension between C4ISR capabilities and vehicles and major weaponry. In fact, they argue that the United States should place a large premium not only on electronics, sensors, and munitions, but also on new types of weaponry to deliver ordnance extremely quickly and in new ways. Proponents of this vision contemplate being able to base forces in the United States but deploy them rapidly and decisively overseas within hours or at most a few days; they also see the United States being able to avoid dependence on large fixed bases in combat theaters. They extend the technological bullishness that characterizes the C4ISR school to the realm of most types of military platforms as well, ranging from ships to airplanes and from combat vehicles to rockets. They do so partly out of technological optimism, and partly out of the conviction that without such a transformation, U.S. military forces will be too vulnerable when deployed to combat theaters in large numbers in future conflicts.

The Air Force first coined the term *global reach/global power,* and used it to argue for more resources for certain types of Air Force programs.[18] Other advocates of airpower have offered similar arguments. These airpower-oriented visions generally emphasize the firepower and rapid-response capabilities of systems such as stealthier air-to-air fighters, B–2 bombers, advanced reconnaissance capabilities, such as UAVs, and so-called brilliant munitions, such as the sensor-fused weapon with autonomous terminal homing capabilities, that do not require human operators in their final approach to a target.[19] They also sometimes include specific force structure proposals that would require cuts in the other services, and would entrust the Air Force with more than the 30 percent of total Pentagon resources it has typically received over the last three decades.[20] These proposals make the Air Force few friends in the Army, Navy, and Marine Corps. Be that as it may, Air Force proponents offer specific suggestions that can be scrutinized and evaluated. The alternative is to give each service its standard share of the budget—in essence making defense strategy in the comptroller's office.[21]

The concept of global reach and global power goes well beyond the Air Force, however. For example, some envision that ground combat units could be organized in radically different ways, permitting them to deploy very rapidly with only modest amounts of equipment and supplies. They might function in very small mobile teams that conduct tactical reconnaissance and call in precise strikes from distant ships or aircraft as they locate enemy assets difficult to identify from air or space. According to a 1996 Defense Science Board task force: "There is a good chance that we can achieve dramatic increases in the effectiveness of rapidly deployable forces if redesigning the ground forces around the enhanced combat cell [light, agile units with 10 to 20 personnel each] proves to be robust in many environments. There is some chance all this will amount to a true revolution in military affairs by eliminating the reliance of our forces on the logistics head, much as Blitzkrieg freed the offense after World War I from its then decades-old reliance on the railhead."[22]

The Marine Corps espouses a related concept. The Marines are experimenting with making future units smaller and basing much of their logistics support on ships, or perhaps on mobile offshore bases that have enormous carrying capacity, airstrips, and resilience to attack. Those capabilities, combined with longer-range airpower, such as the MV–22 Osprey tilt-rotor aircraft, would supersede the traditional notion of storming the beach, purportedly allowing the Marines to keep

many weapons and logistics assets at sea while sending maneuver and scout forces deep into enemy territory directly from their ships.[23]

More recently, the Army has gotten into the act as well, with the Chief of Staff of the U.S. Army, General Eric Shinseki, promoting acquisition of armored vehicles only one-third as heavy as today's that would eventually erase the distinction between light and heavy forces, eliminate tracked combat vehicles from the U.S. military inventory, and permit deployment of a five-division force in 1 month rather than 3.[24]

Some imagine going even further with more futuristic weapons. They envision capabilities such as intercontinental artillery, space-based weapons that could attack targets on earth only a few hundred kilometers below, and directed-energy weapons, such as lasers.[25]

The Pentagon and *Joint Vision 2010*

Where does DOD stand in the RMA debate? In terms of its rhetoric, it merges all of the aforementioned schools of thought into an aggregate position that reflects a highly ambitious interpretation of what a contemporary revolution in military affairs should entail. Force structure, weapons programs, and budgets, however, provide little evidence that DOD is trying to transform forces rapidly. To a large extent, the Pentagon is offering old wine in new bottles: a traditional set of budgetary preferences and priorities dressed up as a blueprint for a revolution in military affairs.

In 1997 the reports of the Pentagon's own Quadrennial Defense Review and the independent National Defense Panel gave strong support to the RMA concept. Both reports used the phrase *revolution in military affairs* repeatedly, leaving no doubt that they accepted that an RMA is under way. The long-term joint and service vision documents had already done the same, so 1997 was, in effect, the culmination of RMA acceptance in mainstream U.S. defense thinking.[26]

The official DOD version of the RMA is, as noted, remarkable for its ambition. It focuses on information systems, sensors, new weapons concepts, much lighter and more deployable military vehicles, missile defenses, and other capabilities. The watchwords for effecting this transformation, employed earlier in *Joint Vision 2010*, begin with information superiority or dominance. They also include the terms dominant maneuver, precision engagement, full-dimensional protection, and focused logistics. Dominant maneuver and focused logistics imply light, agile, deployable, main combat forces. Precision engagement conjures images of accurate and lethal long-range firepower. Full-dimensional

protection suggests, among other things, highly effective missile, air, and anti-submarine and anti-mine defenses.[27]

There is a certain irony in the fact that the cautious Pentagon has become, rhetorically at least, one of the most prominent proponents of the RMA concept. In fact, the same QDR report that espoused information superiority, dominant maneuver, precision engagement, full-dimensional protection, and focused logistics also included an explicit decision not to pursue these goals too quickly. The report adopted the rhetoric of the RMA movement without endorsing its sense of urgency or imminence. Given limited resources for defense, and the competing needs of deterring regional war and supporting an activist U.S. foreign policy, that decision is understandable and possibly sound, but it does tend to belie the claim that transformation is rapidly achievable and urgently needed.

To put it differently, even as it accepted the RMA hypothesis, DOD made few plans to reorganize main combat units, increase their interdependence and jointness, or alter priorities within the weapons modernization program. Nor did it increase the total amount of resources devoted to acquisition accounts—research, development, testing, and evaluation.[28] In fairness to the Pentagon, a cautious approach, even if not internally consistent, may be preferable to adopting a wrongheaded and impetuous RMA agenda. In addition, as Stephen Rosen has argued, RMAs in their early phases depend more on high-quality research, concept development, and experimentation than on massive amounts of money or immediate organizational change.[29] But one thing is clear: it is hard to call current Pentagon policy a transformation plan.

Observing DOD inertia, the National Defense Panel tried to push the military to do more and do it faster. Its 1997 report critiqued the QDR for not adopting a sufficiently ambitious reorientation of Pentagon priorities. But just what the NDP had in mind as a roadmap for the revolution was difficult to discern. It did little to specify which programs and efforts should be accelerated and which should be cut to make resources available for new priorities.[30]

Strategies for Transformation

Given these schools of thought, what is the reasonable range of transformation strategies for Pentagon leaders to consider in the next QDR? It is appropriate to include the existing Pentagon modernization agenda as one approach, rather modest in its substance even if ambitious in its rhetoric. For a study focused on Pentagon force planning, it also makes

sense to analyze the C4ISR and global reach/global power or radical transformation schools. The first suggests that emphasis on better information, sensor, and communications technologies may be appropriate, both for purposes of buying weaponry and for reorganizing U.S. military forces and operational concepts in generally limited ways. The radical transformation school goes much further, envisioning a wholesale restructuring and reequipping of major combat units. Not only would radios, sensor suites, computers, and munitions change, but also vehicles and major weapons systems would, and perhaps main combat formations. It can be difficult to translate such radical RMA visions into a concrete agenda for decisionmaking; most proponents do not spell out in detail what their views would imply. But an illustrative set of technologies and new military units can be sketched, nonetheless.

Although they do not always acknowledge it, members of the C4ISR and global reach/global power schools disagree with each other. They all use RMA rhetoric but their policy recommendations differ widely, particularly in their implications for defense resource allocation and force planning. Sometimes the differences are explicit; more frequently they are implicit and must be ferreted out by analysis. The second of the two schools calls for a much more radical and more expensive restructuring of the U.S. military than the former and is plausibly affordable only if the U.S. defense budget increases substantially, or if the size and deployment tempo of U.S. military forces are substantially reduced.

A Baseline: The QDR Plan

A starting point for considering transformation strategies is to begin with one acquisition agenda that few would actually describe as a transformation approach. It is the existing modernization agenda, based principally on the 1997 Quadrennial Defense Review but also incorporating subsequent changes—most notably, the Army's 2000 plan for developing a lighter, more deployable force.

Much of the DOD plan consists of a traditional approach to procurement. Major platforms such as combat aircraft, surface ships, and transport vehicles constitute the core of the plan. The services intend to continue to modernize their major distinguishing types of combat capabilities largely independently of each other. If there is a greater relative emphasis on munitions, sensors, advanced communications, or other key defense technologies that are advancing most rapidly today, that fact is not obvious from an examination of standard Pentagon budget documents, which still tend to focus on major weapons platforms and do not

present any new categories of technology investment that allow the external observer to discern a shift in basic investment approach. In fact, most evidence suggests that major weapons platforms will receive just as great a share of total funding as in the past—witness fighter and helicopter modernization plans and navy shipbuilding programs.[31] In its recent study of the defense budget, the Congressional Budget Office made similar assumptions, based on its understanding of current Pentagon budgeting.[32] Revealingly, in their budget presentations to Congress for the 2001 budget, all four service chiefs began with and highlighted platforms—rather than advanced munitions, or new types of reconnaissance assets, or C^4 infrastructure—in their discussions of procurement and modernization.

Joint and service experimentation has a higher priority than it once did but is still a small budget item. In the years ahead, research and development budgets are expected to decline, even in the relatively inexpensive and critical areas of basic science and technology.

Redressing U.S. vulnerabilities is a somewhat greater priority than it was 5 to 10 years ago. Notably, expenditures within (and in some cases, outside) the defense budget have increased substantially for mine warfare, ballistic missile defense, chemical and biological weapons protection, and computer security. Counterterrorist efforts, particularly in the area of intelligence, also appear to be vigorous.

In fairness to the Pentagon, it should also be noted that the current acquisition plan includes a large number of systems that, while frequently derided by critics as legacy capabilities, can be justified using the rhetoric of the RMA movement. Stealthy aircraft, for example, use advanced technology to evade defenses; tilt-rotor planes are intended to use speed and range to outflank prepared enemy positions; new destroyers will reduce their detectability while also reducing crew size and packing large numbers of smart munitions. The simple fact that the military services have invented most of these systems in traditional ways does not automatically make them bad ideas, even in a purported RMA era. But the longevity of traditional ways of doing business does raise warning flags about whether the services really have committed to the concepts of *Joint Vision 2010* and the 1997 QDR.

The overall Pentagon procurement program typically cost $80 billion annually in the Cold War years (in constant 2000 dollars), rose to $100 billion in the 1980s, declined to $45 billion in the mid-to-late 1990s, and is now about $60 billion in budget authority. It is likely to have to climb again to $80 billion—and perhaps more—under the existing Pentagon programs.

Combined with a research, development, testing, and evaluation budget of more than $30 billion, that translates into a total acquisition budget of roughly $115 billion, relative to a 2000 level of just under $90 billion. That figure applies for a steady-state situation; it would not have to be attained immediately. But given the gradually declining readiness of U.S. military hardware, the sooner these increases are made, the better.

The reasons for this expected increase are essentially two-fold. First, modern weapons systems, particularly larger platforms, continue to grow significantly in cost, and we have every reason to expect that their costs will keep climbing in the course of development programs and production runs. Second, the so-called post-Cold War procurement holiday must end; after a decade of enjoying the luxury of having large stocks of relatively new equipment that did not generally require immediate replacement, the Pentagon will soon need to begin procuring systems at sustainable rates. (For procurement budget details, see chapter 4.)

What end-state for the U.S. military does this option envision? The short answer is that there is no such end-state. There is no road map for actually carrying out and completing a true transformation. The goal is to shift somewhat more money into experimentation, joint activities, and programs designed to address certain U.S. vulnerabilities, but otherwise to continue a traditional, generation-by-generation approach to major weapons modernization. Again, while this is at odds with the transformation rhetoric of the RMA movement, it is not necessarily a bad thing, if no radical transformation strategy can be clearly identified and pursued at present. However, it does lead to questions about why the Pentagon plans to allow R&D budgets to decline in the years ahead.

C⁴ISR Transformation Strategy

A transformation strategy for C⁴ISR would focus on areas of defense technology where trends in innovation appear to offer the greatest benefit for the dollar, notably in electronics and computer-related sectors. It would also take steps to reduce the ability of adversaries to exploit technology against American vulnerabilities. It would otherwise take a relatively agnostic view of transformation, conducting prototyping and experimentation, but meanwhile awaiting clear proof in the laboratories or test ranges that new types of technologies are truly promising before rushing large amounts of resources into buying new vehicles and major weapons systems. The armed forces would still have to be recapitalized, since hardware is aging and requires replacement. But in many cases, less expensive equipment would be purchased, such as F–15s instead of F–22s, F–16s instead of

joint strike fighters, helicopters instead of V–22 Ospreys, and so on. Sophisticated equipment would still be purchased, but generally in modest numbers and as part of a high-low mix of weaponry.

This approach would not offer as clear an end-state as the more radical option discussed below. Transformation would be seen as an ongoing process. The most likely immediate benefits would be in areas of C^4ISR. Only over time would such large weaponry as ships, combat aircraft, and armored vehicles be replaced. The U.S. military would become lighter, more deployable, more survivable, and more lethal—but only gradually, because vehicles, engines, and large weapons are unlikely to experience radical rates of technological change in the years ahead.

However, a number of capabilities would likely receive important support under this approach. They would include advanced munitions; reconnaissance systems, such as the joint surveillance, target attack radar system (JSTARS), UAVs, and new types of sensors on existing platforms; and integrated joint-service digital communications systems, as well as software to perform real-time data analysis (including automatic target recognition algorithms) and distribution.

This approach would also keep basic research budgets, including science and technology efforts, at or above historic highs in real dollars. That policy would be based on the belief that even if current technology trends and overwhelming American military dominance make it less than essential to modernize fully all major weapon systems immediately, more revolutionary and geostrategically challenging eras cannot be ruled out in the future.

Part of the robust R&D spending would be in the area of joint-service experimentation, which would be likely to grow to several hundred million dollars a year and remain there (in contrast with the all-out transformation option discussed below, which would boost experimentation spending more in the near term and reduce it once the end-state force had been identified). Over time, it is quite likely that experimentation would grow to include dedicated units that would thus not be otherwise deployable—perhaps a fighter squadron, a brigade of ground forces, and a group of ships—with associated annual costs exceeding $1 billion.

This approach would also increase funds for key areas of homeland and theater defense where current levels of funding appear inadequate. These could include certain missile defense efforts, such as the airborne laser and Navy theater-wide system, that may not now be fully funded; cruise-missile defense architectures; redundant technologies for providing

national missile defense rather than just the land-based system now under development for deployment in Alaska; and greater hardening of electronics to deal with potential enemy threats ranging from radio-frequency weapons to high-altitude nuclear bursts. They could also include civilian homeland defense measures, such as greater security for key public and commercial information infrastructure as well as larger stocks of vaccines, antibiotics, chemical weapons antidotes, and protection gear for the nonmilitary population.

Lighter tanks, combat-capable unmanned aerial vehicles, and perhaps arsenal ships would be bought in modest quantities to serve special purposes or to be thoroughly tested as prototypes. However, large numbers would not be purchased until the case for doing so was strong.[33]

Organizationally, this agenda would not necessitate fundamental changes in main combat structures. It would, however, require that their joint-service integration be improved. In addition, some combat structures might need to be scaled back slightly in size or number to save money for transformation efforts. Such changes would not reflect a radical transformation so much as a modest adjustment made in recognition of the improving capabilities of modern weaponry. Some new units would be established for experimentation and prototyping; others might be created to serve specific C^4ISR roles. But otherwise, the Army might well retain its divisions, the Air Force its air expeditionary forces, and the Navy its carrier battle groups under this approach.

This basic option could have higher-cost and lower-cost variants based on available funding. The general philosophy of the approach would place less emphasis on modernizing major weapons platforms than the Pentagon currently does in its weapons plans, allowing silver bullet purchases of modest numbers of advanced platforms, and perhaps even the outright cancellation of some currently planned programs. However, as noted above, many existing weapons modernization programs can be justified—at least rhetorically—on RMA and military transformation grounds. That means there would be strong resistance to curbing them, even if transformation became the guiding Pentagon watchword more than it is today. Many would see the notion of transformation as an addition to the existing modernization agenda, rather than a substitute for it. Thus, this option could exceed the cost of the QDR baseline by about $10 billion annually. But if difficult decisions were made, annual acquisition costs could be held to the same $115 billion vicinity as the QDR plan, or perhaps even somewhat less.

Like the Pentagon's existing plan, this option would not imply a fixed, discrete end-state as much as a quasi-permanent change in the way the armed forces pursue innovation. It would shift more resources into electronics, computing, and other subsystems, and less into platforms, and would keep doing things that way indefinitely. Concept development and experimentation would be further bolstered, but without any expectation of completing a transformation by a certain date. This RMA approach is somewhat more tentative, and somewhat less confident, than a true transformation strategy would be. The global reach/global power school, by contrast, envisions a more radical and definite transformation of the U.S. armed forces. It is RMA with a finish line, rather than a process.

Global Reach/Global Power Transformation Strategy

The global reach/global power transformation strategy would incorporate virtually all elements of the C^4ISR modernization agenda, but it would also go beyond them. Specifically, both its scope and pace would increase, particularly in areas of major platforms, such as vehicles, ships, missiles, and aircraft.

The implications would be numerous. Prototyping would be far less cautious and exploratory; the goal would be to build a transformed force fairly quickly, even if that meant accepting greater technical risk. Concept development and experimentation would be intense over a several-year period, perhaps involving several fighter squadrons, brigades, and surface ship groups in dedicated efforts, with a total cost of several billion dollars annually, counting the costs of maintaining these units.

Intensive R&D, prototyping, and experimentation would last for a finite period, then presumably be scaled back as a concentrated procurement phase began. New concepts, such as arsenal ships and mobile offshore bases, would be built in quantity within service planning horizons (typically about 15 years). Lighter armored vehicles, some possibly using new types of power sources, and some possibly unmanned, would be built to replace M1 tanks and other armor of that vintage. Many combat aircraft would be replaced with UAVs, and new types of stealthy bombers and similar systems might be built.

More exotic weaponry, such as directed-energy weapons, intercontinental artillery, and orbiting kinetic-energy weapons, would be vigorously researched.[34] However, it is difficult to speculate about whether such weapons could really be part of the near-term transformation agenda, given the technological uncertainties surrounding them at present. A wide range of nonlethal arms would be developed as quickly as possible.

New military organizations would be built as well. Some of the ideas that have been proposed include eliminating the Army division, organizing the military into joint-service task forces, and drastically streamlining support capabilities.[35] New units could include small formations of ground soldiers primarily responsible for conducting reconnaissance and targeting for long-range strike systems. They could include groups of pilotless combat aircraft and unmanned tanks. They could be forces tailored to operate from mobile offshore bases with a combination of airpower, special-operations activities, and larger ground-combat formations.

Proponents of this school of thought tend to envision a specific end-state that would be reached when systems and units like those noted above were procured in large numbers. Military change would not, of course, stop once the end-state was reached and the transformation complete. But changes from that point on would generally be of degree, not of kind. They might consist of simply improving new unmanned fighter jets, mobile offshore bases, and hunter-warrior, ground-combat teams. The basic transformation in types of military weaponry and organizations would only happen once, and it would be the sort of thing that could be recorded as a discrete set of events in history books. In that sense, this global reach/global power school truly does tend to believe in transformation of the U.S. military, rather than simply a new process and set of priorities for pursuing defense innovation and investment.

Nonetheless, beyond a certain point it is difficult to spell out this option in detail. Proponents of radical transformation sometimes assume technologies that, if truly available, could well be worth buying—but they may in fact not become available. The problem here is that rhetorical goals and RMA enthusiasm, and even budgetary reallocations, do not themselves produce revolutionary physical results.

This option is sometimes touted as being a way to save money and get the Pentagon out of its looming budgetary shortfall. Quite the opposite seems probable, however.[36] Global reach/global power proponents wish to remake the military more rapidly and more dramatically than would happen under existing Pentagon plans, meaning that they would need to replace weapons not now slated for near-term replacement. Radical RMA proponents hold out the hope that systems, such as unmanned aircraft, may become more affordable as well as more capable than systems, such as the joint strike fighter, now on the defense drawing board. They also sometimes claim that smaller, higher-technology forces may supplant larger current units, saving money in that way. If they are right, their vision may

prove affordable. But no such transformation proponent has, to my knowledge, made a calculation to show how this might be possible for even one narrow area of military technology and capability. Global reach/global power advocates have sometimes described how an enemy might be stopped during the halt phase of battle by such high-technology forces, assuming the United States responds quickly, munitions work as hoped, and so forth. But they have generally not considered the full range of possible scenarios. For example, to conduct counteroffensives into enemy territory that could involve urban or forest fighting, followed by large-scale occupations of another country, substantial numbers of traditional forces would be required. High-tech standoff weaponry probably cannot replace them. Whether the country needs the capacity for two such all-out counteroffensive operations at once can be debated, but global reach/global power advocates rarely engage in such debates.

To consider pursuing a global reach/global power capability, one would first need answers to the following types of questions:

- How many aircraft carriers could one mobile offshore base replace?
- When will unmanned combat aerial vehicles realistically be available, how capable will they be, and how can the Pentagon maintain its aging manned fleets in the meantime without spending huge sums of money doing so?
- What technical breakthroughs will be needed to make lighter, wheeled combat vehicles as survivable and lethal as today's tanks, and how much are these lighter vehicles likely to cost, once available?

Proponents of radical transformation suggest that it is a straightforward matter to determine which existing defense programs or commitments to scale back in order to fund the new technologies. But it is doubtful that they could reach a consensus. For example, the 1997 National Defense Panel used sweeping rhetoric to criticize the existing DOD two-war concept and tactical combat aircraft modernization plan—but failed to offer specifics about how to change them. Its concrete recommendations were confined to several systems with a combined annual procurement cost of no more than several hundred million dollars.

Considering all these factors, an ambitious transformation agenda would almost surely cost more than the 1997 QDR plan. If platforms were replaced frequently, in the belief that revolutionary times were upon us, and that therefore no delay was tolerable in exploiting them, annual procurement could return to its $100 billion level of the 1980s, or even exceed it. It is not plausible that this approach would save money. On the

whole, its total acquisition costs seem likely to range from $120 billion to $150 billion a year (again, in constant 2000 dollars), with the higher end of the range more likely than the lower.

Evaluating the Options

Which approach makes sense: the more limited C4ISR RMA vision, the more sweeping global reach/global power transformation strategy, or some other concept? In thinking about how to evaluate them, one should consider the technological underpinnings—and practicality—of each. One should also consider the geostrategic backdrop. Clearly, if an RMA were possible in a world with a hostile peer competitor, it would be risky not to pursue it. By contrast, in a world with lesser, vaguer threats, it could be counterproductive for U.S. foreign policy to reduce global engagement activities in order to fund an RMA effort.

In my judgment, the C4ISR/modest-transformation school is a better way to think about any contemporary RMA than the bolder global reach/global power concept. Part of the reason is the opportunity cost of the radical approach; it would necessitate either large increases in defense spending or a sharp reduction in U.S. overseas commitments that would probably leave the world less secure.

History provides ample grounds for caution. Most contemporary RMA enthusiasts make reference to the interwar years and claim that we are in a period of similar potential, promise, and peril. However, military technology advanced steadily and impressively throughout the 20th century, including its latter half. Helicopters radically reshaped many battlefield operations after World War II. Intercontinental ballistic missiles and space-launch vehicles followed. Satellite communications were first used militarily in 1965 during the Vietnam War. Aircraft-delivered, precision-guided munitions also made their debut in Southeast Asia in the early 1970s. Air defense and antitank missiles played major roles in the 1973 Arab-Israeli War. Stealth fighters were designed in the late 1970s.[37] Infrared sensors and night-vision technologies were fielded in this period, as well.

History also tells us that radical military transformations only make sense when technology and new concepts and tactics are ripe. The C4ISR school, with its relatively modest transformation agenda, is akin to the military innovation spirit of the 1920s, while the more ambitious global reach/global power school is akin to the 1930s. In the 1920s, such major military vehicles and systems as the tank and airplane were not yet ripe for large-scale purchase. Advanced operational concepts, such as blitzkrieg and

carrier aviation, had not yet been fully developed, so they could not guide hardware acquisition, military organization, or doctrinal development. Thus, research, experimentation, and prototyping were the proper elements of a wise innovation and acquisition strategy. In the 1930s, new operational concepts were better understood, technologies better developed, and geostrategic circumstances more foreboding. Under these circumstances, large-scale modernization made sense, and those countries that did not conduct it tended to perform badly in the early phases of World War II.

Because most radical RMA proponents cannot clearly specify what a near-term transformation should comprise, I am inclined to liken today's situation to the 1920s rather than the 1930s. It is far from obvious that military technology is now poised to advance even more quickly than it has in the last half century, as RMA proponents assert when they call for a radical transformation strategy for current U.S. armed forces. Yet no such radical DOD-wide transformation strategies were necessary to bring satellites, stealth, precision-guided munitions, advanced jet engines, night-vision equipment, or other remarkable new capabilities into the force in past decades.[38]

RMA proponents are certainly right to believe that a successful military must always be changing. But the post-World War II U.S. military has already taken that adage to heart. The status quo in defense circles does not mean standing still. It means taking a balanced approach to modernization that has served the country remarkably well for decades. Indeed, it brought about the very technologies displayed in *Desert Storm* that have given rise to the belief that an RMA may be under way.[39] It is not clear that we need to accelerate the pace of innovation now.

Moreover, radical innovation is not always good. If the wrong ideas are adopted, transforming a force can make it worse. For example, in the world wars, militaries overestimated the likely effects of artillery as well as aerial and battleship bombardment against prepared defensive positions, meaning that their infantry forces proved much more vulnerable than expected when they assaulted enemy lines.[40] Britain's radically new all-tank units were inflexible, making them less successful than Germany's integrated mechanized divisions in World War II. Strategic aerial bombardment did not achieve nearly the results that had been expected of it: airpower was much more effective as close-air support for armored formations in blitzkrieg operations.[41] In 1961, the Army Pentomic division concept, intended to employ tactical nuclear weapons, was abandoned as unusable.[42]

But these are only historical arguments, uninformed by the realities of today's world. What does the current state of technology say about the prospects for an RMA? In my judgment, here, too, the case for the C4ISR approach is much more compelling than for a more radical remaking of the Armed Forces.

One type of evidence to support this argument is that, in their haste to push the revolution along, radical RMA promoters tend to lack clear and specific proposals for how to do so. In that light, even if they are right that an RMA may be within reach in the foreseeable future, they may be quite wrong about what should be done about it now. In practical terms, there is a major distinction between the early stages of a possible RMA and the later stages. As Stephen Peter Rosen has observed:

> The general lesson for students or advocates of innovation may well be that it is wrong to focus on budgets when trying to understand or promote innovation. Bringing innovations to fruition will often be expensive. Aircraft carriers, fleets of helicopters, and ICBM forces were not cheap. But *initiating* an innovation and bringing it to the point where it provides a strategically useful option has been accomplished when money was tight. . . . Rather than money, talented military personnel, time, and information have been the key resources for innovation.[43]

To put it differently, conceptual innovations are often the most important and difficult elements in military revolutions—and they cannot always be hastened by throwing resources at procurement budgets in an effort to drive the transformation process.

Some members of what I have called the global reach/global power school believe that, the above arguments notwithstanding, the United States really has no choice but to rebuild its equipment inventories and combat units from first principles. They believe that future adversaries will make greater use of sea mines, cruise and ballistic missiles, chemical or biological weapons, and other means to attempt to deny the U.S. military the ability to build up forces and operate from large, fixed infrastructures, as in *Desert Storm*. As a result, they consider major steps to change the way that the Armed Forces deploy and fight to be not only desirable but essential.

However, the solutions to these problems may not be exclusively in the realm of advanced weaponry. Long-range strike platforms, missile defenses, short-takeoff aircraft, and other such advanced technologies may be part of the solution, but so might more minesweepers, smaller roll-on/roll-off transport vessels useful in shallow ports, concrete bunkers for deployed aircraft, and other relatively low-tech approaches

to hardening and dispersing supplies and infrastructure. The military services are already biased in favor of procuring advanced weaponry at the expense of equally important but less advanced hardware. By emphasizing modernistic and futuristic technology, the most ambitious RMA concepts could reinforce this existing tendency, quite possibly to the Nation's detriment.

Most centrally, one should be skeptical about the revolution in military affairs hypothesis because many of its key technical underpinnings have not been well established and may not be valid. Proponents of the RMA concept often mention Moore's law—that computing power has historically doubled every 18 to 24 months—then extrapolate an exponential rate of progress to much different realms of technology. For example, in its 1997 report the NDP wrote: "The rapid rate of new and improved technologies—a new cycle about every eighteen months—is a defining characteristic of this era of change and will have an indelible influence on new strategies, operational concepts, and tactics that our military employs."[44] However, conflating progress in computers with progress in other major areas of technology is unjustified. To the extent RMA believers hinge most of their argument on advances in modern electronics and computers, they are at least proceeding from a solid foundation. When they expect comparably profound progress in land vehicles, ships, aircraft, rockets, explosives, and energy sources—as many do, either explicitly or implicitly—they are probably mistaken, at least in the early years of the 21st century.

The arguments of RMA proponents are also sometimes prone to a certain tension, if not outright contradiction. They often motivate their proposals by arguing that enemies will take advantage of U.S. weaknesses and vulnerabilities, avoiding traditional battlefield encounters, but they tend to focus on high-end heavy warfare rather than on infantry, urban, and irregular combat. It is the case, at least, that their common proposals would typically work better in the former arenas than in the latter. Specifically, they sometimes fail to note that trends in defense technology do not make it more feasible for the United States to fight in complex terrain using standoff weaponry, or to find adversaries hidden within buildings, forests, and civilian populations. These realities should temper expectations about just how much warfare really can and will change in the decades ahead.[45]

Conclusion

In 2001, the United States conducts another Quadrennial Defense Review, which will be affected by the large projected budget surpluses, but also by the need to replace large stocks of aging weaponry and to continue a high pace of global military engagement. That combination of growing resources and growing demands leads to the conclusion that difficult choices will still need to be made. In particular, the Department of Defense will need a smart way to think about the possibility that a revolution in military affairs is under way or within reach—and a wise agenda for what to do about it.

A modernization strategy for the U.S. armed forces should, in my judgment, be designed to focus principally on gaining maximum benefit from rapid progress (proven or plausible) in electronics and computers. That approach does not obviate the need to replace certain stocks of aging weapons platforms, or argue against limited purchases of more advanced fighters, ships, and armored vehicles. But it does suggest that fewer resources be devoted to comprehensively modernizing weapons platforms than the services now intend.

Additional measures would place greater emphasis on R&D and joint-service experimentation than Pentagon plans now forecast. Finally, this approach would also include increased efforts to redress U.S. military vulnerabilities in areas such as mine warfare, missile defense, and protection against chemical and biological agents.

This school of thought might be described as the C^{4}ISR school, for its focus on communications, computers, and intelligence. It is analogous in some ways to the modernization efforts of the 1920s, a period in which a number of new military technologies and operational concepts were being envisioned and invented, but were not yet sufficiently mature to justify immediate, large-scale, military transformation.

A transformation strategy—if one wishes to call it that—focused on C^{4}ISR systems, prototyping, experimentation, and alleviation of key U.S. military vulnerabilities makes the most sense. And it is affordable, if real defense budgets increase modestly while the current two-*Desert Storm* (two-MTW) framework and current service modernization plans are reevaluated and revised.

Notes

[1] Alvin Toffler and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century* (Boston: Little, Brown, 1993).

[2] C[4]ISR embraces the full range of command, control, communications, computers, intelligence, surveillance, and reconnaissance systems.

[3] Andrew F. Krepinevich, Jr., *The Conflict Environment of 2016: A Scenario-Based Approach* (Washington, DC: Center for Strategic and Budgetary Assessments, 1996); General Charles C. Krulak, "Operational Maneuver From the Sea: Building a Marine Corps for the 21st Century," *National Security Studies Quarterly* 2, no. 4 (Autumn 1996), 19–23; Robert J. Bunker, *Five-Dimensional (Cyber) Warfighting: Can the Army After Next be Defeated Through Complex Concepts and Technologies?* (Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, 1998); Barry M. Blechman and Paul N. Nagy, *U.S. Military Strategy in the 21st Century* (Arlington, VA: IRIS Independent Research, 1997), 11–16, 68–70.

[4] See Gary Hart, Warren Rudman, et al., *New World Coming: American Security in the 21st Century* (Alexandria, VA: United States Commission on National Security/21st Century, September 1999).

[5] For one such view, see Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey Summary Report* (Washington, DC: Government Printing Office, 1993), 235–251.

[6] For a similar view, see Jeremy Shapiro, "Information and War: Is It a Revolution?" in Zalmay M. Khalilzad and John White, eds., *The Changing Role of Information in Warfare* (Santa Monica, CA: RAND Corporation, 1999), 114–117.

[7] For an argument in favor of taking a large part of the active force structure "off line" so as to devote it to experimentation and acceleration of the RMA, see James R. Blaker, "The American RMA Force: An Alternative to the QDR," *Strategic Review* 25, no. 3 (Summer 1997), 21–30. For a similar but more general argument, see also Richard K. Betts, *Military Readiness: Concepts, Choices, Consequences* (Washington, DC: Brookings Institution, 1995), 35–84. For the view of a conservative critic of the RMA concept, see Frederick W. Kagan, "Wishful Thinking on War," *Weekly Standard,* December 15, 1997, 27–29. Kagan argues that the country may need to spend more on technology, but must not do so at the expense of its present engagement and deterrence strategies.

[8] National Defense Panel, *Transforming Defense: National Security in the 21st Century* (Arlington, VA: National Defense Panel, December 1997), vii, 2, 23, 49, 59, 79–86.

[9] The National Defense Panel used the terms *revolution in military affairs* and *transforming defense* repeatedly and interchangeably, however, so it is not clear that there is really any distinction between them in the current debate. See National Defense Panel, *Transforming Defense;* see also James R. Blaker, "Revolution(s) in Military Affairs: Why the Critique," *National Security Studies Quarterly* 5, no. 1 (Winter 1999), 86.

[10] See, for example, Joseph S. Nye, Jr., and William A. Owens, "America's Information Edge," *Foreign Affairs* 75, no. 2 (March–April 1996), 23–25; see also Jack Dorsey, "Now's time to take risks for new Navy, admiral says," *Norfolk Virginian-Pilot,* October 26, 1997, 1; "Owens: Get Smart Weapons," *Navy News and Undersea Technology,* October 3, 1994, 1.

[11] Kenneth Flamm, "Controlling the Uncontrollable," *Brookings Review* 14, no. 1 (Winter 1996), 22–25.

[12] Martin C. Libicki, "Technology and Warfare," in Patrick M. Cronin, ed., *2015: Power and Progress* (Washington, DC: National Defense University Press, 1996), 120.

[13] On the reasons for skepticism, see Stephen Biddle, "Assessing Theories of Future Warfare," *Security Studies* 8, no. 1 (Autumn 1998), 34–44; on the recent good economic news, see Steve Lohr, "Computer Age Gains Respect of Economists," *The New York Times,* April 14, 1999, A1.

[14] Martin C. Libicki, "DBK and its Consequences," in Stuart E. Johnson and Martin C. Libicki, *Dominant Battlespace Knowledge* (Washington, DC: National Defense University Press, 1996), 23–49.

[15] See Johnson and Libicki, *Dominant Battlespace Knowledge.*

[16] See Statement of General Ronald R. Fogelman, Chief of Staff, U.S. Air Force, before the House National Security Committee, May 22, 1997.

[17] Prominent in this school are Andrew Krepinevich and Michael Vickers of the Center for Strategic and Budgetary Assessments in Washington.

[18] Sheila E. Widnall, "Report of the Secretary of the Air Force," in William S. Cohen, *Annual Report to the President and the Congress, 1997* (Washington, DC: Department of Defense, 1997), 270.

[19] See, for example, Christopher Bowie, Fred Frostic, Kevin Lewis, John Lund, David Ochmanek, and Philip Propper, *The New Calculus: Analyzing Airpower's Changing Role in Joint Theater Campaigns* (Santa Monica, CA: RAND Corporation, 1993); David A. Ochmanek, Edward R. Harshberger, David E. Thaler, and Glenn A. Kent, *To Find, and Not to Yield: How Advances in Information and Firepower Can Transform Theater Warfare* (Santa Monica, CA: RAND Corporation, 1998); Charles M. Perry, Robert L. Pfaltzgraff, Jr., and Joseph C. Conway, *Long-Range Bombers and the Role of Airpower in the New Century* (Cambridge, MA: Institute for Foreign Policy Analysis, 1995); Zalmay Khalilzad and David Ochmanek, "Rethinking U.S. Defence Planning," and Benjamin S. Lambeth, "The Technology Revolution in Air Warfare," *Survival* 39, no. 1 (Spring 1997), 43–64 and 65–83, respectively; Daniel Gouré and Stephen A. Cambone, "The Coming of Age of Air and Space Power," in Daniel Gouré and Christopher M. Szara, ed., *Air and Space Power in the New Millennium* (Washington, DC: Center for Strategic and International Studies, 1997), 1–47.

[20] See Ochmanek, Harshberger, Thaler, and Kent, *To Find, and Not to Yield.* For budget data, see Office of the Under Secretary of Defense (Comptroller), National Defense Budget Estimates for FY00 (Washington, DC: Department of Defense, 1999), 138–141.

[21] M. Thomas Davis, *Managing Defense After the Cold War* (Washington, DC: Center for Strategic and Budgetary Assessments, 1997), iv; John Hillen, "Defense's Death Spiral," *Foreign Affairs* 78, no. 4 (July–August 1999), 2–7.

[22] See Defense Science Board, *1996 Summer Study Task Force on Tactics and Technology for 21st Century Military Superiority* 1 (Washington, DC: Department of Defense, 1996), S-4.

[23] Richard Danzig, "Report of the Secretary of the Navy," in Cohen, *Annual Report to the President and the Congress (1999),* 205–206.

[24] Steven Lee Myers, "Army is Restructuring with Brigades for Rapid Response," *The New York Times,* October 13, 1999, A14; Robert Suro, "Chief Projects an Army on Wheels," *The Washington Post,* October 13, 1999, A23.

[25] On stealth bombers, see, for example, Perry, Pfaltzgraff, Jr., and Conway, *Long-Range Bombers and the Role of Airpower in the New Century*; and Blechman and Nagy, *U.S. Military Strategy in the 21st Century;* on arsenal ships, see Andrew F. Krepinevich, Jr., *A New Navy for a New Era* (Washington, DC: Center for Strategic and Budgetary Assessments, 1996); on long-range and space weapons, see Harlan Ullman, James Wade, Jr., et al., *Shock and Awe: Achieving Rapid Dominance* (Washington, DC: National Defense University, 1996); and George and Meredith Friedman, *The Future of War* (New York: Crown Publishers, 1996); for an Army view, see Edward G. Anderson III and Michael Linick, "Ensuring Future Victories Through Land Power Dominance: The U.S. Army Modernization Strategy," *National Security Studies Quarterly* 2, no. 4 (Autumn 1996), 1–18.

[26] See William S. Cohen, *Report of the Quadrennial Defense Review* (Department of Defense, May 1997), iv–v, 39–51; National Defense Panel, *Transforming Defense,* 5–8; *Joint Vision 2010; Joint Vision 2020.*

[27] Cohen, *Report of the Quadrennial Defense Review,* 39–41.

[28] See, for example, M. Thomas Davis, "Warfighting Transformation: Slow Moving Process," briefing slides, Northrop Grumman Analysis Center, Rosslyn, VA, August 25, 1998.

[29] Stephen Peter Rosen, *Winning the Next War* (Ithaca: Cornell University Press, 1991), 252.

[30] Cohen, *Report of the Quadrennial Defense Review,* 21–27; National Defense Panel, *Transforming Defense,* 1–3.

[31] See, for example, Lane Pierrot, *A Look at Tomorrow's Tactical Air Forces* (Washington, DC: Congressional Budget Office, January 1997), 31–35.

[32] See Lane Pierrot, *Budgeting for Defense: Maintaining Today's Forces* (Washington, DC: Congressional Budget Office, 2000), 18–21.

[33] For more specifics about one interpretation of what such a modernization/transformation agenda would entail, see Michael O'Hanlon, *Technological Change and the Future of Warfare* (Washington, DC: Brookings Institution, 2000), 168–191.

[34] See Ullman, Wade, et al., *Shock and Awe.*

[35] Douglas A. Macgregor, *Breaking the Phalanx: A New Design for Landpower in the 21st Century* (Westport, CT: Praeger, 1997); William A. Owens, *Lifting the Fog of War* (New York: Farrar, Straus, and Giroux, 2000), 205–207.

[36] For instance, in an otherwise provocative and insightful new book, the former Vice Chairman of the Joint Chiefs of Staff, William Owens, argues in one breath that a transformed force could wage war at 35 percent less cost, but in the next breath claims that "we need to upgrade our military, and fast, but we can't do it without money." Owens, *Lifting the Fog of War,* 200, 203.

[37] Lawrence Freedman, *The Revolution in Strategic Affairs,* Adelphi Paper no. 318 (Oxford: Oxford University Press, 1998), 21.

[38] Martin Van Creveld, *Technology and War: From 2000 B.C. to the Present* (New York: Free Press, 1991). Trevor Dupuy uses yet another categorization scheme, different from those of Krepinevich, Van Creveld, and others, to understand the history of military innovation. He groups all progress since 1800 together under the title of "the age of technological change." See Trevor N. Dupuy, *The Evolution of Weapons and Warfare* (Fairfax, VA: HERO Books, 1984).

[39] For warnings against either dismissing the RMA promise or jumping on the bandwagon too enthusiastically, see Colin S. Gray, *The American Revolution in Military Affairs: An Interim Assessment* (Camberley, UK: Strategic and Combat Studies Institute, 1997), 5–7, 33–34; for a reminder that militaries must always be innovating and changing, see Jonathan Shimshoni, "Technology, Military Advantage, and World War I: A Case for Military Entrepreneurship," *International Security* 15, no. 3 (Winter 1990–91), 213–215.

[40] John Keegan, *The First World War* (New York: Alfred A. Knopf, 1999), 20; Dan Gouré, "Is There a Military-Technical Revolution in America's Future?" *The Washington Quarterly* (Autumn 1993), 185; Dupuy, *The Evolution of Weapons and Warfare,* 218–220, 258–266.

[41] Robert Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca: Cornell University Press, 1996), 87–136, 254–313; Brian Bond and Williamson Murray, "British Armed Forces, 1918–1939," in Allan R. Millet and Williamson Murray, *Military Effectiveness,* vol. II (Boston: Unwin Hyman, 1988).

[42] Stephen Biddle, "Assessing Theories of Future Warfare," paper presented to the 1997 Annual Meeting of the American Political Science Association, Washington, DC, August 1997, 37–38; Andrew J. Bacevich, *The Pentomic Era: The U.S. Army between Korea and Vietnam* (Washington, DC: National Defense University Press, 1986); John Keegan, *A History of Warfare* (New York: Vintage Books, 1993), 362–379; Van Creveld, *Technology and War,* 193–195; Rosen, *Winning the Next War,* 13–18, 37–38.

[43] Rosen, *Winning the Next War,* 252.

[44] National Defense Panel, *Transforming Defense,* 7–8.

[45] For a more extensive discussion, see O'Hanlon, *Technological Change and the Future of Warfare,* 106–142.

Chapter Twelve

Strategic Nuclear Forces and National Missile Defense: Toward an Integrated Framework

by M. Elaine Bunn

Both national missile defense (NMD) and strategic nuclear forces (SNF) will be topics with which the new administration will have to wrestle early on, either in the Quadrennial Defense Review or in a separate review. Indeed, whether it views these issues as opportunities or problems, the administration will have little choice but to address them, since they have been very much at play in proposals in the Presidential campaign, arms control discussions with the Russians, and commentary both foreign and domestic. The direction President Bush takes on these issues will have a profound impact on U.S. strategy and force structure, as well as numerous international ramifications.

President Clinton's announcement on September 1, 2000, that he would leave to his successor the decision about whether to deploy an NMD guarantees that it will be a major issue in the new administration (and one that probably would have been revisited even if he had made a decision).[1] Two related categories of NMD questions will need to be addressed in any review: first, whether NMD is, on balance, a good idea from a strategic perspective; and second, how to deal with technical issues, such as the right architecture, countermeasures, cost, feasibility, and readiness of the individual technologies and system integration. The next QDR or other review must address both categories of questions, but this article focuses on the first question: whether NMD is wise from a strategy perspective, assuming the technical issues can be resolved.

After years of a relatively low public profile, SNF has again become a topic of policy debate as well. SNF returned to the spotlight after Russian

ratification of the Strategic Arms Reduction Treaty (START) II and subsequent discussions on nuclear forces at the June 2000 U.S.-Russia summit, the concomitant hearings and press coverage, and the internal Russian debate about the future of its nuclear forces.[2] Governor Bush's May 23, 2000, proposal to consider unilateral nuclear force reductions also made this a topic in the presidential campaign.[3] In addition, Congress mandated a new nuclear posture review (NPR) to be completed by December 2001.[4]

In the past, nuclear and missile defense issues have too often been addressed piecemeal and in isolation from one another. For example, officials considered only nuclear issues, or just missile defenses, or only U.S.-Russian issues such as the ABM treaty or what the START III level should be, or simply the need to respond to rogue-state proliferation, or only how China might react to NMD deployments. Frequently, these issues also have been handled piecemeal in terms of time horizons, with decisions made only on near-term, pressing issues (both programmatically, and with regard to summit-driven arms control), with scant focus on long-term U.S. goals and objectives, and without adequate thought to the interaction of offenses and defenses in U.S. long-term deterrence strategy in the evolving security environment.

Whether in the QDR or in a separate forum, the next administration will need to address both nuclear posture and missile defense because of the relationships, real and perceived, between the two sets of issues. The consideration would in essence be a "strategic posture review," taking into account nuclear and missile defense strategy, policy, force structure, operations (including command and control, alert rates, confidence levels, and reliability of systems), and infrastructure. Also at issue is how the United States deals with other countries, both allies and potential adversaries, through cooperative endeavors, confidence building measures, arms control agreements, unilateral actions, declaratory policy, or other means.[5]

The complex nexus of offenses, defenses, and multiple actors can be seen as a set of interconnected gears. How the United States deals with one country or set of countries on nuclear issues and missile defense affects perceptions of and relationships with others, perhaps with unintended consequences. Although connections obviously exist, it is less clear in which direction and how far the gears will turn. China has had a slow but steady nuclear force modernization under way. How much would China build up nuclear forces, make them more survivable, or place multiple independently-targetable reentry vehicles (MIRVs) on its missiles only in response to U.S. defenses, and how much would it do in any event? Would a

Chinese buildup of nuclear forces change the overall strategic equation if in the end China had approximately the same net nuclear capability over and above U.S. NMD as it has today absent NMD? What would India and Pakistan do, and how would their reactions affect U.S interests? Would Russia really scuttle START, other arms control agreements, and Cooperative Threat Reduction efforts over planned NMD deployments, or would it ultimately see further arms control agreements as in its interest—given the declines that will take place in its nuclear forces because of economics and its interest in getting limits on U.S. defenses? Can the United States balance an offensive drawdown with defensive limits and still be able to defend against proliferant states and reduce their ability to keep the United States out of their backyards by threats to the U.S. homeland?

Even though all outcomes cannot be predicted confidently, the potential interconnections must be understood in order to develop a comprehensive approach to nuclear deterrence and missile defenses. The United States will need to decide which issues it wants to consider the drivers. For example, a strategy that is more concerned about preventive defense and building partnerships with Russia and China would have a different emphasis than a strategy primarily focused on WMD threats to the U.S. homeland or one more concerned about the rise of a peer competitor.

Finding solutions that balance competing (and often contradictory) objectives will not be easy. Improving one set of strategic relationships may exacerbate problems in another set. No course of action will be problem-free. The United States will need to weigh all the implications and make a considered judgment about the costs and benefits of any action, as well as inaction.

U.S. decisionmakers need a new comprehensive framework for looking at the offense/defense nexus and its broad ramifications. Such a framework should integrate several elements: (1) new thinking about deterrence and stability, including identifying whom the United States is trying to deter from doing what, and the role of offensive and defensive forces in that deterrence strategy; (2) a recognition that how the United States deals with one country or set of countries on nuclear forces and missile defense affects its strategic relationships with others; (3) a U.S. decision about what type of deterrence future it wants to work toward, including explicit decisions, for each country of concern, about how much it wants to rely on offensive forces and how much on defenses; (4) what that decision means for nuclear and NMD forces (numbers, composition, and posture); and (5) a strategy for how to deal with other countries to get to the preferred future, whether

through formal arms control agreements, transparency and cooperative measures, unilateral action, or some combination.

This chapter will review briefly where the United States is today on nuclear and missile defense issues; address alternative strategies and their implications; postulate possible future nuclear and missile defense force mixes; assess their potential effects on rogue states, Russia, China, allies, friends, and others; address options for dealing with other countries in getting to the future mix; and propose key issues for the Bush administration's review of missile defense and nuclear issues.

Current Strategy and Forces

The next QDR or separate review will not start with a clean slate on nuclear and missile defense issues. It inherits a long history in both areas, and actual forces in the nuclear area.

Strategic Nuclear Forces

According to the DOD Annual Report for 2000, "nuclear forces are an essential element of U.S. security, serving as a hedge against an uncertain future and as a guarantee of U.S. commitments to allies. Accordingly, the United States must maintain survivable strategic nuclear forces of sufficient size and diversity . . . to deter or dissuade potentially hostile foreign leaders with access to nuclear weapons." Under the START I agreement, the United States and Russia are each allowed 6,000 accountable weapons by the end of 2001. Under the START II agreement, both sides would reduce to 3,000–3,500 accountable weapons (originally by 2003, subsequently agreed for the end of 2007). Under the START III framework agreed to in principle at the March 1997 summit, both sides would reduce to 2,000–2,500 accountable weapons. DOD has said it is "confident that it can maintain the required deterrent" at those START III levels.

The United States has three types of delivery platforms for strategic nuclear weapons: ICBMs, SLBMs on submarines, and heavy bomber aircraft with air-launched cruise missiles and gravity bombs. The U.S. force structure for START II was defined in the 1994 NPR as 500 single-warhead ICBMs; 14 Trident submarines with D–5 missiles; a bomber force of 21 B–2s and 76 B–52s; and nuclear command and control assets.[6] No decisions have been made about a force structure under START III.

The cost of current strategic forces is difficult to calculate. There is no single budget line, and costs are in various program elements, which are not always clearly labeled. Bombers would remain in the inventory for

conventional use even if the United States gave up their nuclear role, so the marginal cost of having a nuclear role for bombers is minimal. For dedicated forces—ICBMs and nuclear-powered ballistic missile submarines (SSBNs)/SLBMs—funding is primarily for completing D–5 missile procurement and Minuteman III service life extension activities, and O&M of existing forces.[7] One expert on nuclear force costs, who estimates the total FY2000 DOD cost of offensive nuclear forces at $9 billion (down from $27 billion in 1990), observed that: "Future savings are likely to be modest because the United States has cut its long- and short-range nuclear forces so steeply over the past decade that the cost of having nuclear weapons and delivery platforms has become dominated by the high fixed cost of staying in the nuclear business."[8]

Outside the DOD budget, the Department of Energy spends approximately $4.5 billion per year on the Stockpile Stewardship Program (SSP), the primary means of ensuring safety and reliability in the nuclear forces, absent nuclear testing.[9] Because SSP infrastructure is needed no matter how few nuclear weapons the United States has, even drastic reductions in nuclear forces would be unlikely to produce a significant drop in spending by the Department of Energy on nuclear weapons.

National Missile Defense

Missile defense has had a controversial history dating back to the debates in the 1960s and 1970s over the U.S. deployment, then dismantling, of the Sentinel and Safeguard ABM system. Since President Reagan's Strategic Defense Initiative speech in March 1983, a number of major shifts of policy and objectives have occurred.[10] The issue of NMD appeared to be headed for a more bipartisan consensus in the past several years, as evidenced by the fact that Congress passed and President Clinton signed into law the Missile Defense Act of 1999.[11] The act states, "It is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense against limited ballistic missile attack." However, any consensus on NMD may be fragile, since there is little agreement on the architecture that should be deployed or how to handle the strategic ramifications, including arms control and relations with other countries.

Countries pursuing WMD and ballistic missile delivery systems, and whose interests may run counter to those of the United States—North Korea, Iran, Iraq, and potentially others—are the driving factor for the NMD program as well as for the TMD program. U.S. strategy posits that proliferant states are likely to choose asymmetric challenges to the Nation

rather than tackling it head-on in areas of strength. U.S. conventional superiority makes it unlikely that these nations would be successful in a conflict with U.S. forces in the air, on the ground, or in the waters in their region. Their first task is to prevent the United States from deploying or reinforcing military forces in the region. Access denial—attempts by potential adversaries to deny U.S. forces access to their regions—can take several forms. Use of WMD against ports and airfields where U.S. forces might deploy is one adversary approach and one reason that the United States is pursuing TMD. Another approach is to attempt to reduce national will to intervene in the region by threatening use of ballistic missiles armed with WMD against the United States. In this situation, NMD could prevent the United States from being self-deterred from involvement in regional crises.

In the last several years, factors have converged highlighting potential U.S. vulnerability to proliferant threats. For example, the Rumsfeld Commission report in July 1998 found that the ballistic missile threat to the United States is broader, more mature, and evolving more rapidly than originally surmised, and that it may emerge with little or no warning.[12] The August 1998 North Korean Taepo Dong test (or attempted satellite launch) with a three-stage missile surprised the intelligence community. That surprise increased awareness of the missile threat and decreased the willingness to assume that the United States would have sufficient warning of the emergence of a threat to begin building defenses later. The Director of the Central Intelligence Agency said in March 2000:

> North Korea already has tested a space launch vehicle, the Taepo Dong-1, which it could theoretically convert into an ICBM capable of delivering a small biological or chemical weapon to the United States, although with significant inaccuracies. It is currently observing a moratorium on such launches, but North Korea has the ability to test its Taepo Dong-2 with little warning; this missile may be capable of delivering a nuclear payload to the United States.
>
> Most analysts believe that Iran, following the North Korean pattern, could test an ICBM capable of delivering a light payload to the United States in the next few years.
>
> Given the likelihood that Iraq continues its missile development—we think it too could develop an ICBM capability sometime in the next decade with . . . foreign assistance.[13]

Other intelligence officials have said that "the missile threat will continue to grow, in part because they have become important regional

weapons in numerous countries' arsenals. Moreover, missiles provide a level of prestige, coercive diplomacy, and deterrence that non-missile means do not."[14]

Some are more skeptical of the proliferant-state ballistic missile threat and see it as a hypothetical issue that may or may not develop in the future. Critics of NMD have said that U.S. intelligence agencies "have dropped the bar for what they consider a threat."[15] These critics tend to believe that the threat of U.S. offensive retaliation will be an effective deterrent to these states if they should acquire a ballistic missile capability against the United States.[16]

Although no decision was made to deploy, the architecture the Clinton administration used for planning purposes had two phases.[17] The first phase, to be deployed by 2007, was optimized for the most immediate threat, that from North Korea. Designed to be capable of defending all 50 states against the launch of a few tens of warheads, accompanied by simple penetration aids, the initial NMD system included 100 ground-based kinetic-kill interceptors based in Alaska, an X-band radar at Shemya Island in Alaska, and upgrades to five existing ballistic missile early-warning radars. It would also have used, for purposes of initial detection of missile launches, the space-based infrared satellite system (SBIRS) in high earth orbit. This initial phase could also defend 50 states against a limited attack of a few warheads launched from the Middle East. A threshold deployment of the first 20 interceptors in Alaska was planned for 2005, although the President's September 1, 2000 announcement recognized that it was unlikely any NMD could be deployed before 2006 or 2007.

The second phase, in the 2010–2011 time frame, would have had an enhanced but still limited capability: negation of up to a few tens of ICBM warheads with complex penetration aids launched from either North Korea or the Middle East. The second phase would include another interceptor site, more interceptors (250 total), several more X-band radars, and the SBIRS-low satellite constellation to help discriminate warheads from sophisticated penetration aids.

The Congressional Budget Office estimated that it would cost $26 billion–$60 billion (depending on which capability and what is included) to build and operate the Clinton administration's planned NMD system over 15 years, with annual costs between $1 billion and $6.5 billion.[18]

As the new administration reassesses the NMD rationale, architecture, and timing, it will need to factor in the ongoing discussions with Pyongyang. If North Korea actually agrees to limit its program in such a

way that the United States can be confident that its missiles are not a threat—a big *if*—then the timelines for deploying NMD may become less severe, depending on actions by other countries of concern, such as Iran's capabilities and relationship with the United States, lifting sanctions against Iraq's pursuit of ballistic missiles and WMD, and the nature of the leadership in Baghdad.

Nuclear and Missile Defense Implications

Any consideration of alternative defense strategies and their implications for nuclear forces and missile defenses should start with a set of basic questions:

- About whom is the United States worried strategically?
- What is it worried they will do?
- How does it deal with and deter those worries? What if they are not deterred? What role do nuclear weapons and missile defenses play?

Defense planners need to ask themselves these questions on a regular basis and to be prepared for answers that change over time. The answers to those questions are different now than they were in 1972, when the ABM Treaty was signed, or in 1983, when President Reagan launched the original Strategic Defense Initiative designed to counter Soviet ballistic missiles, or in 1990, after the fall of the Berlin Wall but before the breakup of the Soviet Union. In each of those years, the answer to the first question was very definitively the Soviet Union. Now, the United States has three baskets of potential strategic worries.[19]

Proliferant states, formerly known as rogues and more recently as countries of concern—that is, North Korea, Iraq, Iran, and potentially others—are the newest set of worries. Second is Russia: not today's Russia, but the uncertain Russia of the future, when the United States might have to deal with a Russia-gone-bad. Three scenarios for Russia would worry the United States. A more aggressive Russia whose interests conflict with U.S. interests might look on its large remaining nuclear force to influence such a conflict of interests. A Russia with a large nuclear force but with uncertain command and control over it might cause the United States to worry about accidental or unauthorized launches or intentional launches based on faulty information. A Russia hemorrhaging WMD or ballistic missile technology and know-how would be worrisome for other reasons. Any of these scenarios, or some combination of the three, would be bad from an American perspective, but how the United States would deal with each would differ. Finally, China is a hard

case, because whether it will become a partner, an enemy, or something in between is unclear.

The concern about any of these countries is that they may use or threaten to use force against the United States, its forces, or its allies and friends. This is particularly troublesome if aggression involves nuclear, biological, or chemical weapons and their delivery means. The threat of use of WMD, particularly in regional crises, may be part of an enemy antiaccess strategy to deter or hamper U.S. intervention in the region.

Another of the basic questions is how to deter. The fundamental goal of deterrence is to prevent aggression by ensuring that, in the mind of a potential aggressor, the potential risks far outweigh the potential gains. Offensive deterrence and defensive deterrence affect different sides of the deterrence scale: offensive forces, whether conventional or nuclear, increase potential risks to aggressors by holding at risk what they value, while defensive forces decrease potential gains by denying an aggressor's ability to hold the United States at risk. The combination of offenses and defenses could, in some scenarios involving limited numbers of ballistic missiles, make an attack "not only fatal because of the certainty of retaliation, but futile because it would not actually succeed in carrying out the mission which was assigned to it."[20]

The emphasis that the United States puts on the two sides of the deterrent equation has evolved since the end of the Cold War. The emphasis varies with the country to be deterred, the action to be prevented, and the tools thought to be effective in affecting that calculation in the adversary's minds. There is significant uncertainty about what various leaderships value and about how they calculate risks and gains—whether or not they do so methodically or consciously or in a way that is logical to U.S. thinking. The United States needs to devote significantly more effort to assessing this. The emphasis placed on offensive and defensive deterrence also is likely to have profound implications for both damage limitation and escalation control if deterrence fails.

Nuclear forces and NMD currently have different roles with regard to each basket of concerns. Proliferant states (rogues) are driving the U.S. NMD program; a limited missile defense can defend against a small use or threat of use but is not designed to defend against a large nuclear capability such as the Russian one. On the other hand, the Nation has in the past made a conscious decision to deal with the possibility of a future hostile, aggressive Russia with traditional nuclear deterrence; indeed, Russia is the driver of the size and posture of U.S. strategic nuclear forces.

Although the United States has said it is not designing its NMD program to defend against Chinese nuclear capabilities,[21] it has not tended to grant China the same status as Russia in the ABM Treaty, where Russia was guaranteed a nuclear capability that could overcome defenses. Indeed, even the proposed Phase I NMD system of 100 interceptors would cause Chinese defense planners concern, given their current nuclear levels. Some have suggested that the United States should not rule out the possibility of defending against China in the future.[22] A consensus does not yet exist in the United States about how to treat China: whether to try to defend against Chinese nuclear capabilities (treat it like a rogue state); to continue to deter China with SNF and give it treaty or declaratory commitments that its future nuclear forces will be effective against U.S. defenses (treat it like Russia); or not to size NMD to defend against China, but also not give it formal or informal commitments that its nuclear forces can overwhelm U.S. defenses (treat China in a unique category).

For the future, the role of nuclear forces and missile defenses will be shaped by the overall defense strategy chosen in the next QDR. The six alternative strategies (A–F) presented in chapter 5 differ in important ways, including the worldview, the assumptions about the U.S. role, and judgments about where to put emphasis and where to accept risk. Consequently, the alternative strategies have varying implications for nuclear and missile defense issues. Key variables include the degree of concern about rogues who have or will get WMD and ballistic missiles for delivering them, and the implications for both nuclear forces and NMD. Also key is the degree of concern about a peer competitor in the mid- or long term, and what that means for nuclear force levels and posture and for NMD. Whether that peer competitor is expected to be China or Russia makes a difference, although the strategy alternatives do not address that explicitly. If it were a hostile and aggressive Russia, the United States would more likely choose to handle it with traditional offensive deterrence; if it were an aggressive China, the United States would need to choose whether to emphasize offensive deterrence, defensive deterrence, or some combination.

Deterrence Futures (2020)

Alternative force mixes, such as those presented below, depend on assumptions about the relationship between strategic nuclear forces and national missile defense. There are four ways of thinking about this relationship.

The first possibility is a direct relationship—that is, the more NMD a country has, the more nuclear weapons the other side will have, while the lower the level of NMD, the smaller the number of nuclear weapons (on both sides) can be. The exact slope of the line is not determined, but the general relationship of both up or both down is the primary characteristic of this view. Examples include the 1972 ABM Treaty/SALT, as well as the current Russian proposal for a reduction in SNF to 1,500 and no NMD (at least none beyond that allowed by the ABM Treaty).

The second possibility is an inverse relationship: one can trade off strategic nuclear forces and NMD. This relationship is most often implicit in budget discussions. An example of this view was the approach briefly considered during the last QDR to put strategic weapons (SNF and NMD) in one category and to reduce funds for one in order to fund programs in the other. Another example would be a possible arms control proposal to have an arms control pot of strategic ballistic missiles, with freedom to mix between ICBMs/SLBMs and NMD interceptors. This idea has been discussed in U.S. circles as well as appearing in recent remarks by the Russian strategic rocket forces commander, who suggested introducing "an unchanging general indicator of strategic weapons which would include anti-missile defence means as well as means of nuclear attack . . . A country that wishes to increase one of the components will cut the other."[23]

The third possibility is that no logical relationships exist between the levels of the two because they are driven by different factors: NMD is sized by rogue state threats, while strategic nuclear forces are sized to deal with a potentially hostile Russia that might be viewed as a strategic threat again in the future. Because there are different drivers, both nuclear forces and missile defenses should be sized independently of each other, and therefore many combinations are possible (both high, both low, or one high, one low).

The fourth relationship between the two types of forces is characterized by the analogy of interconnected gears: there is a relationship, but it is nonlinear and unpredictable. Predicting cause and effect, or the extent of the effects, is difficult. Thus, with a number of possible ways to view the relationship between nuclear and defense forces, no single logic defines the appropriate mix of U.S. offenses and defenses.

Other cautions are in order. First, while defensive force levels in the force mixes presented below are denominated in terms of numbers of interceptors deployed, that term is used only as a proxy for defensive

capability. Besides the number of interceptors, other key variables are the type of interceptors, where they are deployed, their robustness to countermeasures, and how many threat warheads the missile defense system can defend against, with what level of confidence. For example, salvos of four land-based kinetic-kill-vehicle interceptors may be required to defend against one warhead or other credible threat object (such as a decoy that looks like a warhead).[24] Thus, in that case the negation capability would be about one-fourth of the number of interceptors. Where the interceptors are based—for example, land-based in the United States, land-based closer to the threat, ship-based, airborne, space-based—would have huge implications for their effectiveness (particularly against countermeasures), for ABM Treaty negotiations, and for the way they would be viewed by other countries. For instance, ship-based interceptors or forward-deployed land-based interceptors, as a complement to U.S.-based interceptors, might be more robust to countermeasures and protect others outside the United States but could raise other concerns.[25] Because force mixes presented in this chapter address only relative levels of far-term defense capabilities generically, they are not specific as to the basing mode of the defense interceptor. Nor is the use of the number of interceptors to describe defense levels meant to rule out other types of technology in defenses. If a different type of technology (such as laser weapons) were deployed in the future, one would have to develop an "exchange rate" to determine where along the spectrum of force mixes that would fall relative to current hit-to-kill interceptor technology.

Second, none of the options below contemplates the total elimination of nuclear weapons. It would not seem to be feasible by 2020, particularly since the knowledge of how to design and make nuclear weapons cannot be eliminated.[26] The verification standards would be incredibly high in a world in which declared nuclear powers had eliminated their nuclear weapons, since the leverage for a proliferant state that acquired just a few nuclear weapons—or even a single one—would be tremendous.[27]

Third, further significant reductions in U.S. strategic nuclear forces would require a fundamental change in the targeting policy that underlies U.S. strategy for nuclear deterrence of a potential future hostile Russia. Current U.S. policy on deterring a Russia-gone-bad (or in the past, the Soviet Union) means being able to hold at risk what the United States believes a potentially hostile leadership would value. This has historically involved four categories of targets: nuclear forces, other military

forces, economic and industrial targets, and leadership and command, control, communications, and intelligence assets.[28] This type of targeting for deterrence is not based on what would deter the United States or on having enough weapons to kill a specific number of people, or on targeting cities, nor is it determined solely by what nuclear forces the potential adversary has deployed. Because being able to hold at risk Russia's strategic forces is only one part of the strategy, further reductions in Russian nuclear forces would probably not yield further significant reductions in U.S. nuclear requirements regarding Russia. Thus, options that look at levels below the START III framework levels of 2,000–2,500 strategic nuclear weapons would likely require a revision of what the United States would seek to hold at risk in order to deter a Russia-gone-bad; even lower options definitely would. This would require a fundamental change in the guidance by the civilian leadership, including both the President and Secretary of Defense.[29] Such revised guidance might drop one or more categories of targets, relax the exacting damage criteria that affect strategic force levels (for example, by reducing the number of targets within each category that must be held at risk with strategic warheads), or adopt a strategy that targets population (a difficult choice, given American values).[30]

A fourth caution concerning the force mix alternatives presented below is that past U.S. decisions, such as in the NPR, were based on the intention to retain a substantial nuclear force in the face of an uncertain future for Russia. An implicit assumption in those decisions was that whatever the level to which the United States reduced, it would never have more nuclear forces or weapons than that, since increasing nuclear force levels would be both politically and technically difficult particularly under a Comprehensive Test Ban Treaty. The view was that the new lower level would become a de facto ceiling for the United States. That assumption induced caution about going to lower levels. Another way to handle the potential future rise of a peer competitor deemed to require a substantial U.S. nuclear force would be to maintain a robust capability to rearm. This thinking resembles the NPR hedge (including platforms with upload capacity and retention of offloaded warheads). But in the NPR, the hedge was the difference between a START I–plus and a lower START II force. As planners get more comfortable with being able to deter a Russia-gone-bad with the lower START II level of forces, a future hedge might mean the difference between START III or lower levels of nuclear forces (whether treaty-mandated or not) and

START II levels. It might mean having stored components or industrial capability and nuclear weapons complex infrastructure to increase nuclear capabilities within the period in which a threat might arise to merit implementation of the hedge. Ironically, the ability to retain such a rearming capability might be what would allow the United States to agree to substantially lower nuclear force levels in the face of strategic uncertainty about future peer competitors. However, the political difficulty of deciding to rearm—whether by putting more weapons on a downloaded system or by building new ones—should not be underestimated. Unless the situation were clear-cut and unambiguous (not often the case), such a step would likely be seen as escalatory.

A fifth caution is that of stability, a factor often cited in discussions of nuclear forces and missile defense. It refers to many different things, including arms race stability (do nations feel a pressure to increase force size or capability?); crisis stability (do postures mean rapid escalation in times of tension?), a subset of which is first-strike stability (in a crisis, is there an incentive to strike first with nuclear weapons?); and political or regional stability (often defined implicitly by the United States as maintaining the status quo). A strategic posture review that considers various alternative offensive and defensive force mixes will need to consider carefully their implications for all of these types of stability carefully.

Arms race stability has been the focus of much of the discussion to date regarding stability of NMD and nuclear forces. However, numbers of nuclear weapons should not be the only—or even the primary—consideration. More important is the posture of forces: for instance, how nuclear forces are deployed, on what platforms, and whether they are survivable in all types of situations, both day-to-day and in times of heightened tension when a nation may put more of its forces on alert (with the risk of escalating a crisis by that very action). Such factors have an impact on whether forces are stabilizing (particularly in the sense of crisis stability), or whether they invite escalation, by a large peer competitor, by a small proliferant nation, or even by the United States itself in its response to crisis situations. Security and stability, not numbers, should be the measure of merit. Lower numbers are not in and of themselves better; one can postulate a force with lower numbers that is very unstable.[31] Additionally, early warning and command and control capabilities are important factors in considering crisis stability.

Sixth, in looking at SNF levels, accountable weapons do not equal available weapons. The accountable numbers under START II, for example,

include all strategic nuclear weapons that could theoretically be deployed. However, at any given time, the number the United States actually deploys is less. For example, bombers and submarines in long-term overhaul would not be available even if forces were alerted. Actual loadings of available platforms may be less than that allowed by treaty for operational reasons. The platforms available on a day-to-day basis may be less than in the *generated* case (particularly for bombers, which have been taken off alert). The numbers in the options below envision a continuation of the situation in which accountable weapon levels are greater than actual. In the case of an arms control agreement with a mechanism to count only weapons actually deployed at any time (for example, on SSBNs at sea, not those in port or undergoing overhaul), or under unilateral declarations that included only deployed forces, the strategic force numbers could be lower.

Finally, the disparity between U.S. and Russian tactical nuclear weapons becomes more of an issue in looking at lower numbers (perhaps those below START II, and certainly those below the START III framework).[32] Similarly, nondeployed nuclear warheads, production capability, and reliability of deployed platforms and warheads would have to be examined more closely. With smaller numbers, less of a cushion is available to absorb problems or uncertainties with one's own or another nation's nuclear posture.

Possible Future Force Mix Options

As noted above, no single logic on the relationship between defenses and offenses defines the appropriate mix. Consequently, the following eight illustrative force mixes for the 2020 timeframe offer various notional levels of NMD (in ascending order, since the current level is zero) and various levels of strategic nuclear forces (in descending order from the current substantial numbers), combined in illustrative force mixes. (Note that the nuclear force levels include strategic forces only and exclude tactical weapons.)

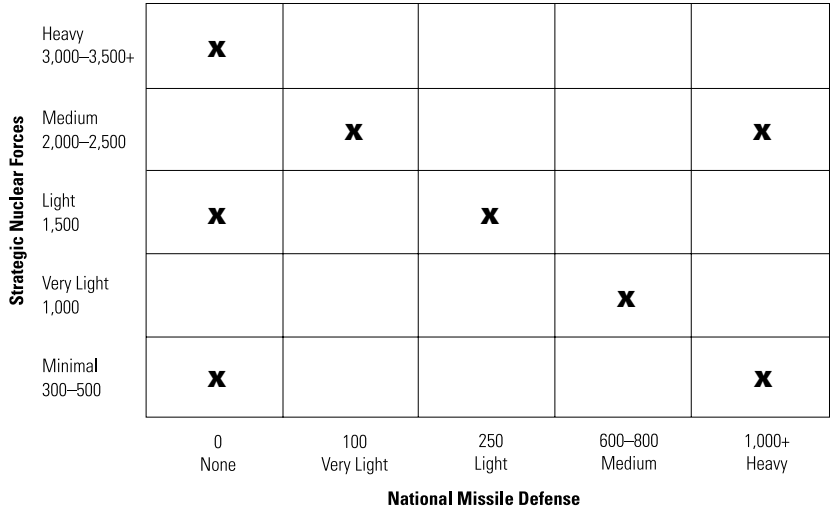
Although levels of offensive or defensive forces in these mixes of forces are not all-encompassing, they cover a range of possibilities that have been put forward—either explicitly proposed or generally implied—by U.S. government officials, nongovernmental organizations, Congressional members or staffers, political candidates, other countries, or foreign or domestic academic analysts. These illustrative force mixes should be seen primarily as a device to identify and frame key issues that must be addressed in a strategic review. The precise numbers are not the issue; numbers are used only to give a sense of relative emphasis

on either nuclear forces or NMD in future strategies and are subject to the various caveats noted above.

The force mixes listed below are also depicted in figure 12–1:

- *No NMD/heavy SNF (0/3,000–3,500).* This option would be a continuation of the no-NMD status quo for the United States, with nuclear forces at START II levels.
- *No NMD/light SNF (0/1,500).* This option would be the mix under the Russian proposal for nuclear reductions to 1,500 warheads and no NMD beyond that allowed in the ABM Treaty. Since the United States is unlikely to want to deploy that defense, it translates to zero for the United States.
- *No NMD/minimal SNF (0/300–500).* This option would drastically reduce nuclear weapons by 2020 and would not deploy NMD. This option might be attractive to those who are not worried about Russia or China as a future peer competitor and who believe that a very low number of nuclear weapons (until elimination) is the best route for stability and security (for example, the United Nations Conference on Disarmament). This mix, given the worldview inherent in it, would refrain from deploying NMD, so as to avoid spurring larger or more sophisticated Chinese nuclear forces or reducing incentives for planned and future Russian reductions. Instead, it would handle rogue states entirely with diplomatic measures, with offensive retaliatory capability, or with preemption.
- *Very light NMD/medium SNF (100/2,000–2,500).* This option represents a long-term continuation of the Clinton administration proposal to the Russians: Phase I of the U.S. NMD program, and START III framework levels for strategic nuclear forces. It assumes continued robust nuclear deterrence of a potentially hostile Russia, with the current targeting strategy for Russia driving nuclear force levels and posture and a small rogue threat driving NMD. It also assumes either very limited countermeasures by rogues, or breakthroughs in U.S. capabilities to handle them (for instance, with boost-phase interceptors or improved ability to discriminate warheads from penetration aids).
- *Light NMD/light SNF (250/1,500).* This mix represents a future at the Phase II NMD levels of the Clinton administration plan, to defend against a few tens of warheads with complex penetration aids launched from either North Korea or the Middle East, and nuclear forces at the levels proposed by Russia.
- *Medium NMD/very light SNF (600–800/1,000).* This option would place NMD at levels comparable to those envisioned under the 1992 U.S. proposals for the Global Protection Against Limited Strikes system and nuclear forces at the levels to which some predict Russia will fall.
- *Heavy NMD/medium SNF (1,000+/2,000–2,500).* This option would maintain nuclear deterrence at START III levels and deploy a robust NMD. The

Figure 12–1. Illustrative Strategic Nuclear Forces and National Missile Defense Force Mixes for 2020



nuclear forces in this option might be driven by a worldview concerned about a Russia-gone-bad, able to overcome even a robust defense, or with capabilities the United States cannot defend against and to deter which it therefore needs a large nuclear force. The NMD forces might be driven by a rogue threat involving multiple rogues, large numbers of ballistic missiles with WMD, and/or very effective countermeasures against NMD, or by a decision to defend against a Chinese ballistic missile force that had large numbers and/or very effective countermeasures.

- *Heavy NMD/minimal SNF (1,000+/300–500)*. This mix represents defense-dominant deterrence: the United States would maintain only low levels of nuclear weapons as retaliatory insurance against any WMD-armed power including those that might employ delivery means other than ballistic missiles, and it would deploy robust NMD (in multiple-basing modes) against all potential threats (Russia, China, and rogue states). With its de-emphasis of nuclear deterrence, this option would require not only ballistic missile defense, but also much more emphasis on defending against other types of WMD delivery, such as cruise missiles or other air delivery, or covert delivery to U.S. soil. However, since some nuclear forces remain, offensive deterrence could still play some role in deterring or retaliating against rogues, or even Russia or China, although the determination of which valued assets

would need to be held at risk, and the resultant strategy, would have to be very different from today's.

While the strategy alternatives presented in chapter 5 provided the context for formulating the force mixes in figure 12–1, there is not a one-to-one correlation between the strategies and the specific force mixes. However, Strategy A (current strategy of shape, respond, prepare now) might consider force mixes including no-to-light NMD (0–250) and heavy-to-medium SNF (3,500–2,000). Strategy B (engage more selectively and accelerate transformation) might consider force mixes with light-to-heavy NMD (250–1,000+) and heavy-to-medium SNF (3,500–2,000). Strategy C (engage more selectively and strengthen warfighting capabilities) might consider force mixes with no-to-light NMD (0–250) and medium-to-very light SNF (2,500–1,000). Strategy D (engage today to prevent conflicts tomorrow) might consider force mixes with no-to-very light NMD (0–100) and light-to-minimal SNF (1,000–300).

In any event, a considerable amount of time would be needed to reach any of these future alternative force mixes (except those that approximate the status quo), since achieving them would mean reducing nuclear forces, acquiring NMD forces, or both. In the near term, only evolutionary changes would be possible, but the United States should know where it is trying to head and what path it wants to be on, even though changes in the security environment may alter the path and the endpoint.

Assessing the Mix Options

Each of the options outlined above could have a variety of effects on the potential adversaries, allies, and others that must be considered in choosing among them. The players whose reactions must be considered include rogue state proliferants, Russia, China, India, and Pakistan, and U.S. allies and friends.

Rogue State Proliferants

The "no NMD" options above represent a future world in which either no future rogue ballistic missile threat exists, perhaps because of the success of nonproliferation efforts, or rogue ballistic missiles may pose a problem in the future but traditional nuclear deterrence, or even preemption, is determined to be the way to handle those concerns. Deterrence with the threat of retaliation implies not only that rogue leaders are rational, but also that the United States understands what they value and how they calculate risks and gains. For preemption, it would require confidence that the United States knew where their WMD was, could destroy it

all before it was used, and would have the political will to initiate a conflict. Under these options, whether for low or high levels of SNF, the question arises as to whether the United States has the appropriate capabilities tailored to rogues who place valued assets (leadership, WMD capabilities) in hardened, deeply buried bunkers. If they cannot be destroyed conventionally, should the United States consider developing earth-penetrating nuclear weapons with low yield and high accuracy?[33] Another consideration in options with very low levels of nuclear forces is the importance of the posture and survivability of U.S. nuclear weapons. Nuclear reductions should not decrease survivable nuclear forces to such low levels or concentrate them in so few places that even rogue state capabilities could destroy them.

For those who would choose options that include some NMD deployments, the assumptions are that rogue states will have ballistic missiles capable of threatening the United States and that the United States cannot be confident that traditional nuclear and conventional offensive deterrence will be sufficient. Even without assuming that rogue state leaders are irrational, it is difficult to know how leaders such as Kim Jong Il or Saddam Hussein calculate risks and gains, particularly if regime survival were at stake and they felt their backs were against the wall. Even without actual use of ballistic missiles against the United States, the threat of use by rogue states might be able to keep the United States from intervening or reinforcing deployed forces. This worldview sees an inherent connection between U.S. involvement in the world and the power projection that goes with that, and the resulting need for NMD. If the United States is to continue to have worldwide commitments and be out in the world, it is likely to incur the wrath of regimes who do not like U.S. "interference."[34] A proliferant's threat of use of ballistic missiles—and the prospect of massive deaths of noncombatants on U.S. soil because of potential U.S. involvement in a far-away situation—could be a powerful deterrent to U.S. involvement. In this view, it may be that a "good enough" U.S. ballistic missile defense is a small deployment that deflects the threat of use, reassuring the U.S. public that it is not risking Chicago or Los Angeles to an angry proliferant if the United States projects power into the proliferant's neighborhood. In all the options that include NMD, missile defenses would not be the only tool for dealing with such threats; nuclear and conventional offensive deterrence would still play a role even if one were not confident that it is sufficient by itself. In this view, the United States could

afford to have less confidence in any one of the capabilities if it has complementary and reinforcing capabilities.[35]

Russia

Russian officials have said that with any level of U.S. NMD—light or heavy—they would abandon the START process.[36] They have also indicated they might withdraw from the 1987 Intermediate-Range Nuclear Forces Treaty, which banned all U.S. and Soviet land-based ballistic missiles and ground-launched cruise missiles in the 500–5,500 kilometer range. Even if the Russians withdrew from arms control agreements, it appears to be increasingly economically difficult for them to maintain large nuclear forces (especially in the near-to medium-term), although they might keep MIRVs as long as possible, possibly even past the safe lifetime of systems. They might also put more of their limited resources into nuclear forces. It has also been suggested they might also sell ballistic missile or countermeasure technology to rogues. On the other hand, some suggest that Russia eventually will see that reaching an agreement with the United States on offenses and defenses is in its interests, given the declines in Russian nuclear forces forced by economic pressures and its interest in getting limits on U.S. defenses.[37] Others suggest that the Russians may wait until they are sure that the United States is going ahead with missile defenses before they negotiate seriously.[38]

The option for heavy NMD/medium SNF is the one most likely to trouble worst-case defense planners in Russia who might worry about a theoretical disarming U.S. first-strike, if there were enough U.S. defenses to absorb a ragged retaliation with Russia's remaining nuclear forces. It would particularly cause them concern if Russia were economically unable to retain more than 1,000 strategic nuclear warheads, even if there were no arms control treaty beyond START II. At this level of U.S. NMD, even if all 1,000 Russian nuclear warheads were survivable and reliable, it would have no assured deterrence against the United States. The Russians might respond by putting heavy emphasis on penetration aids or other countermeasures to eat up U.S. interceptors and assure penetration; they might also put more emphasis on air delivery if the United States did not also improve its air defenses.

For strategy alternatives that are more responsive to concerns about the breakdown of Russia's strategic command and control system or the rise of disaffected personnel in the Strategic Rocket Forces (perhaps Strategy F in chapter 5), the question arises as to whether the U.S. NMD system should be designed against a Russian accidental or unauthorized launch.

The current system is designed to counter the rogue threat and has only incidental inherent capability to handle a few incoming missiles launched by accident from Russia or China; it could not handle the numbers that would be more plausible in an unauthorized launch scenario, from about ten warheads in a battalion of SS–25s with single reentry vehicles (RVs), up to 200 warheads for a boatload of SLBMs.[39] Both the very light and light NMD options would be inadequate if an accidental or unauthorized Russian launch were a driver; for such a scenario, a medium NMD force might be more appropriate.[40]

China

Chinese statements indicate that of the U.S. options outlined above, they would prefer no NMD and minimal SNF.[41] China's most immediate concern about options that include any level of NMD is likely to be the erosion of its ability to influence U.S. behavior if it cannot hold the United States at risk. It is particularly concerned that the United States might not be deterred from coming to Taiwan's defense if China used force to reunify Taiwan with mainland China. They seem to fear that the more confidence Taiwan has that the United States would intervene on its behalf, the less restrained it will be in stepping toward independence. (Chinese concerns about Taiwanese independence and its ability to resist Chinese coercion—including the threat of use of SRBMs—may be why China seems to be even more opposed to the United States providing Taiwan with TMD than to U.S. deployment of NMD.)

At very light or light levels of NMD, China may decide to increase its modernization program further to attain the capability to overwhelm U.S. defenses. Even 100 U.S. interceptors would be problematic for the Chinese at their current force levels assumed to be about 20 ICBMs,[42] even using the assumptions reportedly used by U.S. defensive planners (4–5 interceptors required per attacking RV).[43] However, while the United States will be defense-conservative and assume it needs 100 interceptors to have high confidence that none of 20–25 attacking RVs will get through, Chinese strategic planners will be offense-conservative and assume that if the United States has 100 interceptors and China has 100 RVs, none of the Chinese RVs might get through. This also applies to the case of 250 U.S. interceptors and 250 Chinese RVs. Almost any NMD system capable of defending well against rogue threats will have a significant impact on the Chinese nuclear force from the viewpoint of China's offense-conservative planners.

China has long had under way a modernization program that includes increasing the survivability, range, and accuracy of its nuclear forces.[44] It is likely that China has the capability to deploy MIRVs, although it has not yet done so.[45] A key question is how much China would build up its nuclear forces, make them more survivable, or MIRV its missiles only in response to U.S. defenses, and how much it would do in any event.[46] If China did build up its nuclear forces, would it change the overall strategic equation, if in the end China had approximately the same net nuclear capability over and above U.S. NMD as it has today absent NMD?[47] At what level of NMD forces—such as the medium or heavy NMD options above—might China decide not to try to build up to overcome U.S. defenses? Or would it devote enough resources to overcome defenses at any level?

Apart from NMD, what effect might U.S. nuclear force options have on Chinese nuclear force levels? For options that include minimal levels of U.S. strategic nuclear forces (300–500), would the Chinese maintain their current low levels of strategic forces? How much might they expand and modernize their forces? Would there be an incentive, for either prestige or security reasons, to build up their nuclear forces equal to or above U.S. levels? Would the United States make deep cuts without limits on China's nuclear forces? These are all questions to be considered by the United States in making SNF and NMD plans.

India and Pakistan

U.S. NMD deployments and nuclear forces could influence what India and Pakistan do. If China chose to respond to a U.S. NMD by further increasing its intercontinental nuclear forces, India, a regional rival, might ratchet up its nuclear forces; this in turn could lead Pakistan to follow suit.[48] However, other factors might be more important drivers for India's nuclear force decisions, such as China's more numerous intermediate- and short-range nuclear systems capable of striking India (these are unrelated to U.S. NMD decisions and possible Chinese decisions about a buildup of intercontinental nuclear forces).[49] Pakistan might also be more of a driver than China for Indian nuclear force decisions.

Some suggest that reductions of U.S. nuclear forces might set an example to keep India and Pakistan from weaponization and further buildups. Alternatively, their nuclear decisions may be influenced very little by what the United States does (or does not do) and very much by regional concerns. It is difficult to know what effect U.S. decisions will have on India and Pakistan, but a considered judgment requires that these questions be asked.

Allies and Friends

Pacific allies—Australia, Japan, and South Korea—have been less vocal publicly about their views on NMD, but European allies have raised concerns that U.S. deployment of NMD would jeopardize the ABM Treaty, upset relations with Russia, and cause a new arms race. Although generally more skeptical about the rogue state threat, some allies also have raised questions about whether it would be decoupling for the United States to have defenses against rogue state ballistic missiles if European allies did not.[50] French and German leaders have been particularly vocal in public criticism of NMD plans.[51] British parliamentarians have cautioned that the United States "cannot necessarily assume unqualified UK cooperation with U.S. plans to deploy NMD in the event of unilateral U.S. abrogation of the ABM Treaty."[52] Such cooperation would be needed: U.S. NMD plans call for upgraded radars at Fylingdales in the United Kingdom, as well as in Thule, Greenland, which is under Danish control.

In the past, the British and French have expressed concerns about whether U.S. NMD deployments would prompt higher levels of Russian defenses, which could undermine the British or French nuclear forces vis-à-vis Russia. This would seem to be less of a concern with U.S. NMD against proliferant states, particularly given the Russian economy and the resulting unlikelihood of a Russian defensive buildup. However, U.S. cooperation with Russia on missile defense might raise these concerns anew.

If the United States chooses a force mix that includes any level of NMD, it will need to put greater effort into consulting with allies about the strategic rationale. Some Americans have argued that defenses are an enabler of continued commitments to friends and allies, not a withdrawal from it, and that the United States is more likely to come to the defense of allies and of common interests if the homeland is not vulnerable to the use or threat of use of rogue ballistic missiles.[53]

U.S. willingness to provide missile defense coverage for allies or to cooperate in their acquisition of defenses may address allied concerns about decoupling. In many cases, what is TMD for the United States is effectively NMD for allies. A combination of upper and lower-tier TMD systems (such as Theater High-Altitude Area Defense, Navy Theater Wide, Navy Area Defense, Patriot PAC–3, MEADS, or Airborne Laser) can provide coverage to many smaller countries against the less-than-intercontinental-range missiles that would be targeted at them. The United States has been discussing possible TMD cooperation with allies for many

years.[54] More recently, President Clinton indicated U.S. willingness to share missile defenses with other "civilized nations."[55]

With regard to strategic nuclear forces, the United States would also need to consult closely with both NATO and Pacific allies before going to lower levels, given the long-held U.S. commitment to extend nuclear deterrence to allies.

In the category of friends—such as Israel, Saudi Arabia, Kuwait, and Taiwan, with whom the United States has no formal mutual defense treaty commitments—there is more ambiguity but some expectation the United States would come to their defense.[56] They might be most concerned about the choices the United States makes about NMD. If the United States were subject to ballistic missile threats to its homeland, it might be more likely to be deterred from intervening on behalf of friends where there is a less formal and more ambiguous commitment than where vital interests and stakes are clear—that is, on behalf of countries with whom it has formal treaty commitments.

Getting from Here to There

The discussion above focuses on where the United States might want to be in the future regarding the offense/defense mix and the possible consequences in its relationship with other countries. But how to get there is as important as the destination. How the United States deals with other countries in reaching its preferred outcome can have a big effect on how they react.

Three broad categories of options for dealing with other countries include traditional arms control, transparency or cooperative measures, or an independent, others-be-damned reaction to the security environment. Traditional arms control includes continuing to negotiate treaties, either on nuclear offensive forces only or on both offenses and defenses. If the decision is to pursue treaties on nuclear forces, a further decision is whether to continue them as U.S.-Russia only, or to determine at what point in reductions it would make sense to expand them to include China, the United Kingdom, France, or even India, Pakistan, and Israel. If arms control treaties on defenses were also pursued, they could be treaties that trade off offenses and defenses (this might fit in the U.S.-Russia context only—for example, a treaty that allows a specified number of ballistic missiles, with freedom to mix SLBMs, ICBMs, and defensive interceptors). They could be separate but linked treaties (like ABM and SALT I). They could be independent treaties on offenses and defenses that delink the two, on the basis that

the driving factors for each are different. However, the latter would be difficult, given Russian efforts and motivation to link the two.

An approach based on transparency or cooperative measures, but no further treaties on offensive or defensive forces, might include a "Global Protection System" revisited.[57] Some have suggested that the time has come to revive the 1992 U.S. proposal for an international system to share information and possibly defensive technologies and capabilities.[58] There were some similarities with this in President Clinton's remarks on May 31, 2000, regarding sharing missile defenses with "civilized nations." Such a proposal for cooperation might include building on the agreement reached at the June 2000 U.S.-Russian summit for joint early warning of missile launches.[59] Other cooperative measures might include the concept put forward by Richard Garwin and Ted Postol on ground-based interceptors in Russia and elsewhere to catch rogue missiles in boost-phase,[60] or the June 2000 proposal of Russian President Vladimir Putin to work with NATO to create "an anti-rocket defense system for Europe."[61] The transparency approach might involve unilateral U.S. statements regarding plans and intentions for strategic forces and NMD, encouraging others to follow suit, but not conditioned on their reciprocating (similar to the 1991–1992 Presidential Nuclear Initiatives). It might include declared limits conditioned on others' actions: for example, "assuming country A does not increase its offensive forces above N, and country B reduces its forces to R, we will reduce our nuclear forces to X and limit our national missile defenses to Z."

The first two approaches—traditional arms control, and transparency and cooperative measures—are not mutually exclusive and might be combined by transitioning from existing agreements, retaining aspects of them, while adding to them or modifying them with other initiatives.

A third approach, in contrast, leaves all countries to undertake their own independent reactions to the security environment. Each country does what it believes it needs to do for its own national security (including for its allies and other vital interests) without regard to the actions of other countries.

Back to the Near Future

Most of the discussion above has looked far ahead. Looking at the near future instead, what does it all mean for the administration and the next QDR? The administration needs to make a considered judgment about the best way to proceed on NMD and SNF in light of its overall strategy and worldview. In that context, it should consider alternative deterrence futures,

and take a longer view—beyond the next summit or the next election—of where the United States should be headed with regard to the emphasis it places on offenses and defenses and the proper mix of forces. It will also need to consider all of the relevant factors and potential consequences, instead of addressing them piecemeal, and should develop a plan for dealing with other countries—allies, potential adversaries, and those in between—in getting to the preferred future. Such a review needs to be conducted early in a new administration, whether in the QDR or in a separate review.

Notes

[1] <www.whitehouse.gov/library/hot_releases/September_1_2000_2.html>.

[2] Hearing of the Senate Armed Services Committee on U.S. Strategic Nuclear Force Requirements, May 23, 2000; interview with Defense Secretary William S. Cohen by Katie Couric on NBC's *Today Show,* May 29, 2000, as reported in "For the Record," *The Washington Post,* May 31, 2000, 26. On Russian debate, see Nikolai Sokov, "A Conflict Of Strategic Interests," *Jane's Defence Weekly,* August 2, 2000.

[3] See, for example, John M. Broder, "Breaking the Cold War Mold," *The New York Times,* May 26, 2000, 1.

[4] The House and Senate versions of the National Defense Authorization Act for Fiscal Year 2001 (H.R. 4205 and S. 2550) include a requirement (section 1015 in each bill) that the Secretary of Defense submit a report to Congress on the results of a comprehensive review of U.S. nuclear posture for the next 5 to 10 years.

[5] A "strategic posture review" could logically be widened to include such "strategic" capabilities as conventional precision-guided munitions or other nonnuclear capabilities, information operations, special operations, and potentially space assurance. In essence, it would address the question of what messy future "strategic" situations the United States might face, and how to cut across traditional organization structures to provide the President with a range of options to deal with them.

[6] START II prohibits MIRVed land-based missiles, so the United States will eliminate 50 ten-warhead Peacekeeper missiles and download the three-warhead Minuteman IIIs to one warhead when START II enters into force. There are currently 18 SSBNs, with a combination of C–4 and D–5 missiles. A decision was made in 1999, however, to reduce the SSBN force to 14 submarines even without START II entry into force. The NPR stated that 66 B–52s were required—a number the Air Force subsequently changed to 71, then to 76, to have sufficient assets to keep 56 B–52s flying; Congress has mandated retention of 94 B–52s. The original NPR decision was for 20 B–2s; an additional B–2 was subsequently added.

[7] It is unclear that much of that would be saved in the short term, even if the programs were terminated, given the costs of contract termination. The FY01 budget submission included $464 million in the procurement account for Trident II ballistic missiles, to backfit SSBNs with the D–5, and $42 million for ICBM replacement equipment. If there were a problem with START II entry into force and the United States decided to maintain the Peacekeeper missile, DOD would at some point need either to reopen the production line or to cannibalize the force to have assets for reliability tests. However, the need for such a decision is not imminent.

[8] David Mosher, in Cindy Williams, ed., *Holding the Line: U.S. Defense Alternatives for the Early 21st Century,* BCSIA Studies in International Security (Cambridge: MIT Press, forthcoming 2001). Mosher also notes that "As a result of U.S. (and possibly Russian) concerns about survivability, future treaties will probably reduce the number of warheads carried on submarines, but not require significant cuts to the Trident force. Even in the case of deep cuts, the United States will likely insist on retaining at least ten submarines in order to ensure—for survivability and targeting reasons—that it can keep at least three or four submarines at sea all the time, with at least one in each ocean. If the Trident force is cut to 10, savings would amount to less than $500 million a year because the cost of

operating the force is driven by the infrastructure necessary to support the submarines and the weapon system; it is relatively insensitive to the number of submarines in the force. If all 500 ICBMs are eliminated, savings would not be much more than $1 billion a year through 2020. Reducing the number of nuclear-capable bombers will not save any money because the size of the bomber force after the Cold War is driven by the increasing demand for bombers in conventional (non-nuclear) conflicts. . . . In short, as long as the United States continues to be a nuclear power, keep submarine-launched ballistic missiles at sea, maintain a robust early-warning network and command and control system, and pursue a science-based stockpile stewardship program, the price tag for nuclear forces will not fall much below where it is today, even if forces are slashed to 1,000 weapons."

[9] Figures from *A National Security Strategy for a New Century,* The White House, December 1999, 4.

[10] There have been shifts from the original 1983 Reagan Strategic Defense Initiative vision to make ballistic missiles "impotent and obsolete"; to the 1985 Phase I/II system with space-based lasers to defend against Soviet systems; to the 1991 Global Protection Against Limited Strikes system with ground and space-based kinetic-kill interceptors; to the 1993 deemphasis of NMD to make theater missile defense (TMD) the number-one missile defense priority; to the 1996 "three-plus-three" plan, which evolved into the Clinton administration plans for a limited ground-based NMD. With so many changes in objectives, plans, and systems, it is no wonder that $40 billion–60 billion has been spent with no deployments to show for it and that the Russians are dubious about U.S. assurances that current NMD plans will not affect their nuclear deterrent, since U.S. plans may change.

[11] Some analysts have stated that "a political consensus now exists that a limited [NMD] system provides a necessary answer to the emerging ballistic missile threat from the so-called rogue states," and that the question before U.S. policymakers is thus "not whether to deploy an NMD system but how." See Ivo H. Daalder, James M. Goldgeier, and James M. Lindsay, "Deploying NMD: Not Whether, But How," *Survival* 42, no. 1 (Spring 2000), 6.

[12] *Executive Summary of the Report of the Commission to Assess the Ballistic Missile Threat to the U.S.* (the Rumsfeld Report), July 15, 1998. Available at the Government Printing Office website: <ftp://fedbbs.access.gpo.gov/gpo_bbs/cia/bmt.htm>.

[13] Statement by Director of Central Intelligence George J. Tenet before the Senate Foreign Relations Committee on "The Worldwide Threat in 2000: Global Realities of Our National Security," March 21, 2000.

[14] Robert D. Walpole, National Intelligence Officer for Strategic and Nuclear Programs, Statement for the record to the Senate Subcommittee on International Security, Proliferation, and Federal Services on the Ballistic Missile Threat to the United States, February 9, 2000.

[15] See, for example, remarks by Joseph Cirincione, "Evaluating the Criteria for NMD Deployment," *Arms Control Today,* April 2000, at <www.armscontrol.org/ACT/april00/panap00.htm>.

[16] See, for example, comments by Spurgeon M. Keeny, Jr., Steve Fetter, and Joseph Cirincione in "Evaluating the Criteria for NMD Deployment," *Arms Control Today,* April 2000. See also Lawyers' Alliance for World Security, *White Paper on National Missile Defense,* April 2000, available at <www.gsinstitute.org/laws.pdf>.

[17] The description of Clinton administration NMD plans is from testimony by Under Secretary of Defense for Policy Walter B. Slocombe to the House Armed Services Committee, October 13, 1999. Slocombe's testimony divides the administration plan into Phase I and Phase II, the terminology used for ABM Treaty discussions with the Russians.

[18] Congressional Budget Office paper, "Budgetary Implications of the Administration's Plan for National Missile Defense," April 2000.

[19] This chapter focuses on nation-states and does not explicitly address nonstate actors or terrorists, since there appears to be little if any role for nuclear and missile defense forces in dealing with nonstate terrorists.

[20] Walter B. Slocombe, Hearings before the Senate Armed Services Committee, May 23, 2000. Slocombe was discussing the combination of limited NMD and "deterrence by retaliation" in dealing with rogue states armed with WMD.

[21] Slocombe said: "our [NMD] system is designed with respect to rogue states. . . . It is not aimed at China or Russia or any other country, other than the rogue states." DOD News Briefing, January 27, 2000, <www.defenselink.mil:80/news/Jan2000/t01272000_t0127asd.html>.

[22] For example, Senate Foreign Relations Committee Chairman Jesse Helms (R–NC) reportedly said that "leaving the American people vulnerable to Beijing's nuclear blackmail is a threat to U.S. national security." See Miles A. Pomper, "The International Fallout of an Anti-Missile System," *Congressional Quarterly Weekly,* August 12, 2000. See also Steven Mufson, "In GOP, a Backstage Struggle on China Policy," *The Washington Post,* August 22, 2000, A10: "Other Republicans believe that a missile defense should guard against China. They fear China might try to blackmail U.S. aid for Taiwan in the event of a confrontation there." On the other hand, Mufson quotes Condoleezza Rice, President Bush's National Security Advisor, as saying that, "I don't think China is going to modernize enough—if we keep our nuke secrets to ourselves—to be a threat to our deterrent capabilities. It can modernize enough to threaten our missile defenses, but I'm not putting China in a category of states that would try to blackmail the United States."

[23] Interfax News Service, November 13, 2000.

[24] See David C. Gompert and Jeffrey A. Isaacson, "Planning a Ballistic Missile Defense System of Systems," RAND Issue Paper 181 (Santa Monica, CA: RAND, 1999).

[25] For further discussion of sea-based and other complementary or alternative NMD capabilities, see John M. Deutch, Harold Brown, and John P. White, "National Missile Defense: Is There Another Way?" *Foreign Policy,* no. 119 (Summer 2000); Frank Morring, Jr., "DOD Considering Aegis-Based System For Down-The-Road Missile Defense," *Aerospace Daily,* August 28, 2000; James Glanz, "Other Systems Might Provide a U.S. Missile Shield," *The New York Times,* September 4, 2000, 1, and Gompert and Isaacson, "Planning a Ballistic Missile Defense System of Systems."

[26] Some have facetiously made a "modest proposal" for eliminating nuclear weapons that includes lobotomizing all nuclear scientists worldwide.

[27] For further discussion of the difficulties of "going to zero" in the foreseeable future, see testimony by Walter B. Slocombe before the Senate Governmental Affairs Subcommittee on International Security, Proliferation and Federal Services, Hearing on Nuclear Weapons and Deterrence, February 12, 1997.

[28] For example, these categories were explicit in the targeting plans produced as a result of the 1974 National Security Decision Memorandum 242, which continued the refinement of deterrence concepts already under review since the early 1960s. For further discussion of this and other aspects of nuclear history, see Michael O. Wheeler, "The Development of Arms Control Strategy and Arms Control," prepared as an annex to his paper, "The Future of Nuclear Deterrence and Arms Control," for a National War College conference on nuclear deterrence held June 29, 2000, in Washington, DC. Cited by permission of the author.

[29] For further discussion of this issue, see Hearings before the Senate Armed Services Committee, May 23, 2000, particularly the statements by the Commander in Chief, Strategic Command, Admiral Rich Mies, and Senator Carl Levin.

[30] "The evolution of U.S. nuclear strategy . . . has, since the 1940s, been in the direction of seeking options which provide a president something other than wholesale destruction of an enemy's major cities if deterrence fails. . . . Sustaining deterrence as we know it today . . . has been an effort to move away from that as the only option. It is unclear how deeply we can cut U.S. nuclear forces without having to resort to something like an uninhibited city-busting strategy as the only targeting strategy which could be credible to the enemy. Sustaining deterrence under those conditions would cause a deep crisis in American values over time." Wheeler, "The Development of Arms Control Strategy and Arms Control," 7.

[31] For instance, a very small U.S. nuclear force, or one deployed in a limited number of sites and with no defenses, could make an adversary believe that in a crisis it could wipe out a large portion of U.S. nuclear forces, even with a small number of warheads. This would also tend to make a U.S. president quicker to "launch before losing" all or a substantial portion of U.S. nuclear forces.

[32] Tactical nuclear weapons are relatively small, short-range systems designed for use in battlefield or theater-level operations. These weapons have not been covered by strategic arms control

agreements or the Intermediate-Range Nuclear Forces Treaty; they are subject only to the unilateral declarations made by Presidents Bush and Gorbachev in 1991. According to DOD charts released at the conclusion of the NPR in 1994, Russia at that time had approximately three times as many active and inactive non-strategic nuclear weapons as did the United States. For further discussion of possible restraints on these weapons, see William C. Potter and Nikolai Sokov, "Nuclear Weapons That People Forgot," *International Herald Tribune,* May 31, 2000.

[33] The Senate version of the FY2001 defense authorization bill calls for the Secretary of Defense, with the Secretary of Energy, to conduct a study to assess both current and future options to defeat hardened and deeply buried targets as well as weapons to minimize the effects of WMD.

[34] "Reducing the odds of attacks in the United States might require pulling back from involvement in some foreign conflicts. American activism to guarantee international stability is, paradoxically, the prime source of American vulnerability." Richard K. Betts, "The New Threat of Mass Destruction," *Foreign Affairs* 77, no. 1 (January/February 1998).

[35] For some time, the consensus has been that, in the face of WMD and ballistic missile proliferation, TMD made sense as part of a set of capabilities to deal with asymmetric threats to deployed U.S. forces and allies. The question is whether the same logic applies to NMD and proliferant or rogue states. This mix of capabilities would be present in any of the options that include both NMD and nuclear forces (that is, all but the first three).

[36] See, for example, Igor Ivanov, "The Missile-Defense Mistake: Undermining Strategic Stability and the ABM Treaty," *Foreign Affairs* 79, no. 5 (September/October 2000). Russian Foreign Minister Ivanov writes, "If the United States unilaterally withdraws from the ABM treaty, Russia will no longer be formally bound by its obligations to reduce strategic armaments, and the very process of nuclear disarmament will be inevitably terminated, if not reversed."

[37] The current debate in Russia between the factions of Defense Minister Igor Sergeyev, who wants to maintain and modernize the Strategic Rocket Forces, and Chief of Staff Anatoly Kvashnin, who wants to reduce strategic forces drastically and refocus resources on building more conventional military forces, would suggest that there are economic pressures for Russia to go to lower nuclear levels. See "Putin Tries Big Shift In Military Strategy," *The Christian Science Monitor,* August 2, 2000, 1. Kvashnin reportedly recommended that the number of Russian ICBMs should be limited to 150. Sergeyev and Strategic Rocket Forces Commander-in-Chief Yakovlev said Kvashnin's proposal would deprive Russia of a meaningful response to the U.S. NMD system, and added that accelerated elimination of ICBMs would result in significant short-term costs. See Nikolai Sokov, "A Conflict of Strategic Interests," *Jane's Defence Weekly,* August 2, 2000.

[38] There is a precedent for this in the Intermediate-Range Nuclear Forces negotiations: as long as it looked like the United States and NATO might not actually deploy Pershing IIs and Ground Launched Cruise Missiles (because of internal politics, protesters marching in Europe, and flight-test failures), there was little incentive for the Soviets to reach an agreement.

[39] See Dean A. Wilkening, "How Much Ballistic Missile Defense is Enough?" working paper, Center for International Security and Cooperation, October 1998, 6.

[40] This level is comparable to the 1992 Global Protection Against Limited Strikes system, which was sized to the threat of accidental or unauthorized launch of a Russian boatload.

[41] See, for example, Erik Eckholm, "China Says U.S. Missile Shield Could Force an Arms Buildup," *The New York Times,* May 11, 2000: "China's chief arms negotiator [Sha Zukang] said today that the American proposal to build an anti-missile defensive shield posed an unacceptable threat to China's security and could force Beijing to significantly expand its own nuclear forces in response." Sha is further quoted as saying, "To defeat your defenses, we'll have to spend a lot of money, and we don't want to do this." With regard to nuclear weapons, China has said that, "The major nuclear powers should abandon the nuclear deterrence policy, and the states having the largest nuclear arsenals should continue to drastically reduce their nuclear weapons stockpiles." See the Chinese white paper, "China's National Defense," by the Information Office of the State Council of the People's Republic of China, July 27, 1998, 27.

[42] See Zalmay M. Khalilzad et al., in *The United States and a Rising China* (Santa Monica, CA: RAND, 1999), 39.

[43] See "talking points" on the ABM Treaty, said to have been used by U.S. negotiator John Holum with Russian officials in Moscow in January 2000, reprinted on *The Bulletin of Atomic Scientists* website, <www.thebulletin.org/issues/2000/mj00/treaty_doc.html>. However, a Ballistic Missile Defense Organization spokesman said the ratio of interceptors to warheads remains classified. See John M. Donnelly, "U.S. Told Russia About Classified Antimissile Capabilities," *Defense Week,* May 1, 2000.

[44] See Michael D. Swaine and Ashley J. Tellis, *Interpreting China's Grand Strategy* (Santa Monica, CA: RAND, 2000), 121–123.

[45] See Khalilzad et al., *The United States and a Rising China,*55.

[46] One press report on a still-classified U.S. National Intelligence Estimate (NIE) regarding reactions to NMD deployment states, "The intelligence report said that while China did not want to become engaged in a costly arms race, if the United States deployed a national missile defense system, China was more likely to increase its arsenal of missiles carrying multiple nuclear warheads." See Tabassum Zakaria, "U.S. Intelligence Assesses Global NMD Reaction," *Reuters,* August 8, 2000. See also Roberto Suro, "Study Sees Possible China Nuclear Buildup," *The Washington Post,* August 10, 2000: "China, the study concludes, already is working to modernize and modestly expand its strategic force of some 20 fixed-silo, single-warhead intercontinental missiles. But, in response to the creation of a U.S. missile shield, China probably would try to develop both mobile and multiple-warhead weapons, expanding its force to as many as 200 warheads to be able to overwhelm the American defenses, the officials said." See also Steven Lee Myers, "U.S. Missile Plan Could Reportedly Provoke China," *The New York Times,* August 10, 2000; and Bob Drogin and Tyler Marshall, "Missile Shield Analysis Warns Of Arms Buildup," *Los Angeles Times,* May 19, 2000, 1.

[47] Condoleezza Rice reportedly "could envision China expanding its nuclear missile arsenal beyond its current level of about two dozen to more than 100 without fundamentally changing U.S. nuclear strategy." Steven Mufson, "In GOP, a Backstage Struggle on China Policy," *The Washington Post,* August 22, 2000, A10.

[48] See, for example, Gaurav Kampani, "How a U.S. National Missile Defense Will Affect South Asia," May 2000, Center for Nonproliferation Studies, Monterey Institute for International Studies; and editorial, "Missile Defense Could Be Provocation," *Omaha World Herald,* May 26, 2000.

[49] See Gregory S. Jones, "From Testing to Deploying Nuclear Forces: The Hard Choices Facing India and Pakistan," RAND issue paper, Project Air Force, IP–192 (2000). Jones notes (3) that "Compared with India, China has formidable nuclear forces. China is believed to have deployed some 125 long-range (1700 km or greater) nuclear-armed ballistic missiles. . . . In addition, China is believed to have some 150 bomber-deliverable nuclear weapons and 120 tactical nuclear weapons deliverable by short-range missiles or artillery. An attack using just a small part of this force could have a devastating effect on an Indian nuclear force."

[50] For example, French Foreign Minister Hubert Védrine said, "There are members of the alliance who wonder if this won't lead to unequal security. If there is a real threat, why are you protecting only yourselves?" Quoted in Jane Perlez, "Antimissile Defenses: Clinton Decides To Keep U.S. Options Open," *The New York Times,* September 2, 2000.

[51] See for example, Christopher Lockwood and Marcus Warren, "Clinton Plea as Missile Plan Splits NATO Allies," *London Daily Telegraph,* June 6, 2000, 1; and Roy Gutman, "Institute Blasts U.S. Defense Plan: NATO–U.S. rift grows in 'unnecessary' step," *Long Island Newsday,* May 7, 2000, 21.

[52] UK Select Committee on Foreign Affairs, *Weapons of Mass Destruction: Report and Proceedings,* HC 407, <www.publications.parliament.uk/pa/cm199900/cmselect/cmfaff/407/40702.htm>.

[53] For example, Henry Kissinger has said that a system that protected America against limited nuclear attacks would "enhance rather than diminish our willingness to defend our allies." See Perlez, "Antimissile Defenses."

[54] For example, in 1995, NATO adopted a framework for extended air defense as part of the NATO Defense Group on Proliferation, and the Conference of NATO Armaments Directors has conducted numerous studies of TMD over the past decade. Discussions with Japan led to a decision in 1998 to cooperate on the Navy theater wide system.

[55] See, for example, CNN.com, "Clinton offers to share missile defense technology," May 31, 2000.

[56] Israel has been working on missile defense for over a decade and recently began deployment of the Arrow missile defense system, which resulted from a joint U.S.-Israeli RDT&E program.

[57] For a description of the 1992 Global Protection System proposal, see the statement of Stephen J. Hadley, Assistant Secretary of Defense for International Security Policy, Hearing of the Senate Armed Services Committee, Subcommittee on Strategic Forces and Nuclear Deterrence, on "Programs and Architectures for Ballistic Missile Defense," May 20, 1992.

[58] See, for example, Carla Anne Robbins, "Bipartisan Thinkers Look Past Traditional Arms Control," *The Wall Street Journal,* May 18, 2000, 28.

[59] "Russia–United States Memorandum of Agreement on Establishment of a Joint Center for Early Warning Systems Data Exchange and Missile Launch Notifications," Weekly Compilation of Presidential Documents, Washington, DC, June 12, 2000.

[60] Theodore A. Postol, "A Preliminary Analysis of a Russian-U.S. Boost-Phase Defense to Defend Russia and the U.S. from Postulated Rogue-State ICBMs," presented to the Carnegie Endowment for International Peace, Proliferation Roundtable, October 12, 1999, available at website <www.ceip.org/programs/npp/postol.htm>; and Richard L. Garwin, "A Defense That Will Not Defend," *Washington Quarterly,* Summer 2000.

[61] See Alessandra Stanley, "Putin Goes to Rome to Promote Russian Arms Control Alternative," *The New York Times,* June 6, 2000, 1.

Chapter Thirteen

Choosing among Strategy-Driven Integrated Paths: Setting the DOD Course

by Michèle A. Flournoy

One of the principal challenges for the new administration in the 2001 QDR will be ensuring that the dozens, if not hundreds, of decisions it will make over the course of the review are consistent with its chosen strategy rather than ad hoc. The administration will need a framework that relates specific choices back both to its defense strategy and to the iron triangle—the choice between spending more on defense, cutting costs, or asking the U.S. military to do less. It will need to develop a strategy-driven, integrated path that knits together the broad policy and programmatic choices consistent with its chosen strategy.

What follows is a description and comparison of four strategy-driven, integrated paths, based on four of the principal strategy alternatives described in chapter 5. Each of these integrated paths describes what a strategy looks like if fully funded and identifies what is in the potential tradespace if it is not fully funded. In addition, we offer a set of key indicators of a strategy-resources gap that would force a fundamental decision to increase the resources available for defense, create more tradespace by changing some of the political constraints affecting what can be put on the table, or change the strategy. While this project did not have the resources to develop fully or to cost out the elements of each integrated path, we offer principles to guide decisions in each key area.

Each integrated path includes several significant elements; each of these key elements is described in two different resource contexts. The context of full funding—that is, resources are relatively unconstrained—describes the principles that would guide decisions in a given area if the strategy were provided with all the resources necessary to achieve a low level of risk. The second context, where resources are constrained, describes the candidates

for the tradespace—approaches to consider to reduce costs in a given area while aiming for a low-to-moderate level of risk. Even if a given approach is included in the potential tradespace column, this does not imply that it would necessarily save meaningful amounts of money while yielding no more than moderate risk. Its inclusion means only that it has that potential, appears to be consistent with the strategy, and is worthy of more in-depth examination in the QDR. (Each key element of the integrated path is described in greater detail and in the tables found on pages 354–61.)

The category of *key policies and assumptions* presents a given strategy's priority missions, that is, where it places emphasis. How many major theater wars should U.S. forces be prepared to conduct? What end-state objectives are envisioned? What is the concept of operations in MTWs? This element also encompasses the degree to which U.S. forces should be involved in presence, engagement, and SSCs; assumptions about the proportion of U.S. forces that would disengage from SSCs to redeploy to MTWs; and the degree and priority of DOD support to civilian agencies for homeland security.

The *force structure* element describes the methodology that might be used to design a low-risk force structure and identifies capability shortfalls that a given strategy would seek to address. It also suggests some of the force structure and capability tradeoffs that might be considered under a given strategy to reduce force structure costs while trying not to incur more than moderate risk.

The *modernization* element reflects how a given strategy would prioritize investment in science and technology, research and development, procurement, new starts, and concept development and experimentation efforts, as well as the approaches it would consider to reduce the costs of meeting its modernization goals in a resource-constrained environment.

The *force manning* element of the integrated path lays out the principles that would be used to determine how the force should be manned in accordance with the priorities of the strategy. Manning refers to the degree to which the billets or spaces in a given unit or organization are actually filled with people. If a unit has fewer people than its organizational table would suggest, it is undermanned; if it has more, it is overmanned. This element considers manning for units in warplans, the rotation base of units that support peacetime operations, high-demand units, and the force generation base. In the tradespace, this element addresses ways of reducing demands on active-duty forces.

Force management deals with policies governing the management of the Armed Forces in peacetime to meet a strategy's objectives. This includes approaches to meeting peacetime demands while dealing with considerations of service tempo rules for both units and personnel; the flexibility of the force and the degree of tolerance for force substitutions; alternative basing and rotation concepts; and different approaches to theater engagement plans.

The *readiness* element articulates the set of standards that a given strategy would establish in the areas of manning, training, equipment, and infrastructure under different resource constraints.

In the *people/quality of life* element, principles that would govern policies on military pay, housing, quality of bases and facilities, healthcare, pensions and retiree benefits, and family programs are identified for both the resource-constrained and the resource-unconstrained contexts.

The *other* element of the integrated path highlights a strategy's general approach to a select number of other important elements of the defense program, such as strategic nuclear forces, the nuclear labs and stockpile stewardship capability, counterproliferation programs, the strategic reserve, infrastructure, and DOD business practices.

Differences among the Strategies

Some factors distinguish one strategy-driven integrated path from another, while other factors are common to most or all of them. The factors that distinguish one path from another are primarily in the areas of key policies and assumptions (reflecting the different mission priorities of the strategies), force structure (particularly in identifying potential tradespace areas), and modernization (both priorities, if fully resourced, and potential tradeoffs, if not).[1]

Key Policies

In the absence of resource constraints, all four strategies would call on U.S. forces to be able, among other things, to fight and win two major wars with only a low level of risk. Strategy B would likely consider new concepts of operations for achieving that end. In a resource-constrained environment, all four strategies would consider accepting low-to-moderate levels of risk in this area. Strategy A and Strategy C would maintain the current two-MTW standard, while Strategy B might consider adopting a different end-state objective or concept of operations in one of the

Table 13–1. Strategy A. Shape, Respond, Prepare Now

Area	Fully resourced (low risk)	Potential tradespace (low-to-moderate risk)
Key policies	Deter/win two MTWs—current endstate and concepts of operation; 50% (vice 100%) SSC withdrawal for MTWs; full (current) level of SSCs and engagement; full presence; limited DOD homeland security mission	No change except for SSC disengagement policy of 75% (vice 50%) for MTWs
Force structure	Conservative and robust approach—two MTWs + 50% SSCs + stay behind presence *or* rotation-based; correct shortfalls in ISR/precision munitions, lift, support force, and chemical, biological, and radiological detection and decontamination; expanded ability to support homeland security when committed to MTWs	Allow dual apportioning, swing; greater reliance on Reserve components and allies; invest in ISR/precision munitions and other enhancements to reduce platforms/units; eliminate and/or convert less critical forces, including in strategic reserve
Modernization	Full acquisition funding; increase funding of basic science and technology, research and development, concept development and experimentation, and new starts	Forego/slow select new systems buys; increase ISR/precision munitions to reduce platforms; use greater hedging; leverage programs of allies
Force manning	Full manning of warplans/rotation base; greater manning in high-demand elements	Less than full manning; greater use of Reserve component augmentation; initiatives to civilianize military functions
Force management	Rotational rules that allow predictability within service tempo rules; allow for substitutions without difficulty; prioritized, predictable theater engagement plans	No changes to rotation rules; greater use of substitutions; global resourcing of more selective theater engagement plans; new concepts for presence (basing, rotations, etc.)
Readiness	100% manning of warplan units, greater for high demand; resource optimum training; full funding of maintenance and infrastructure (C-1)	Full manning of key units, no overmanning; resource essential training; fund maintenance and infrastructure at lower levels (C-1/C-2)

Personnel	Improve pay, housing, medical, retirement, bases, and family programs	Maintain current levels of pay, housing, medical, retirement, bases, and family programs; seek efficiencies
Other areas	Sustain nuclear forces; exercise robust nuclear stewardship; expand counterproliferation	Reduce size and readiness of nuclear forces; sustain nuclear stewardship and counterproliferation efforts; reduce infrastructure

Key indicators for a fundamental review of this strategy and its resourcing:

- Inability to resource both MTWs at moderate risk (that is, capability and/or readiness shortfalls are clearly evident)
- Inability to sustain presence, engagement, and SSCs without unacceptable tempo levels
- Inability to support homeland security missions and two MTWs concurrently at moderate risk
- Chronic inability to meet modernization funding objectives (that is, inability to meet most urgent recapitalization needs and/or having to cancel needed programs to fund others)
- Inability to fund high-priority new starts
- Inability to sustain suitable levels of concept development and experimentation
- Inability to cope with technical surprise or emergency threats
- Chronic inability to meet recruiting and retention goals
- Deterioration of morale and quality of life
- Inability to maintain a credible, secure, and safe nuclear deterrent

Table 13–2. Strategy B. Engage More Selectively and Accelerate Transformation

Area	Fully resourced (low risk)	Potential tradespace (low-to-moderate risk)
Key policies	Deter/win two MTWs—current endstate and current or new concepts of operation; 50% (vice 100%) SSC withdrawal for MTWs; selective SSCs/engagement; full presence; limited DOD homeland security mission	Deter/win two MTWs—one with limited endstate; SSC disengagement policy of 75% (vice 50%) for MTWs; selective SSCs/engagement and presence; limited DOD homeland security mission
Force structure	Conservative and robust approach—two MTWs + 50% SSC + stay behind presence *or* rotation-based; correct shortfalls in ISR/precision munitions, lift, support force, and chemical, biological, and radiological detection and decontamination; expanded ability to support homeland security when committed to MTWs	Size for MTWs, transformation, and homeland security only (all else lesser-included); invest in ISR/precision munitions and other enhancements to reduce platforms; allow dual apportioning, swing; greater reliance on Reserve components and allies; eliminate and/or convert less critical forces, including in strategic reserve
Modernization	Increase funding of basic science and technology, research and development, concept development and experimentation focused on transformation; fully fund acquisition; increase new start funding	Focused investing in generation after next systems, with higher science and technology, research and development; forego/slow systems that do not support transformation; leverage programs of allies
Force manning	Full manning of warplans/rotation base; greater manning in high-demand elements	Less than full manning, including rotation base; greater use of Reserve component augmentation; initiatives to civilianize military functions
Force management	Policies that allow readiness and predictability within service tempo rules; allow for substitutions without difficulty; prioritized, predictable theater engagement plans	Greater use of substitutions; global resourcing of more selective theater engagement plans; new concepts for presence (basing, rotations, etc.)

Readiness	100% manning of warplan units, greater for high demand; resource optimum training; full funding of maintenance and infrastructure (C-1)	Full manning of key units, no overmanning; resource essential training; fund maintenance and infrastructure at lower levels (C-1/C-2)
Personnel	Improve pay, housing, medical, retirement, bases, and family programs	Maintain pay, housing, medical, retirement, bases, and family programs; seek efficiencies
Other areas	Sustain nuclear forces; exercise robust nuclear stewardship; expand counterproliferation	Reduce size and readiness of nuclear forces; sustain nuclear stewardship and counterproliferation efforts; reduce infrastructure

Key indicators for a fundamental review of this strategy and its resourcing:

- Inability to sustain suitable levels of science and technology, research and development, concept development, and experimentation
- Inability to fund high-priority new starts
- Chronic inability to meet modernization funding objectives (that is, inability to meet most urgent recapitalization needs and/or having to cancel needed programs to fund other)
- Inability to cope with technical surprise or emerging threats
- Inability to resource both MTWs as envisioned at moderate risk (that is, capability and/or readiness shortfalls are clearly evident)
- Inability to support homeland security missions and two MTWs concurrently at moderate risk
- Inability to sustain presence, engagement, and SSCs without unacceptable tempo levels
- Chronic inability to meet recruiting and retention goals
- Deterioration of morale and quality of life
- Inability to maintain a credible, secure, and safe nuclear deterrent

Table 13–3. Strategy C. Engage More Selectively and Strengthen Warfighting Capability

Area	Fully resourced (low risk)	Potential tradespace (low-to-moderate risk)
Key policies	Deter/win two MTWs—current endstate/concepts of operation; 50% (vice 100%) SSC withdrawal for MTWs; selective level of SSCs/engagement; full presence; limited homeland DOD security mission	No change except for SSC disengagement policy of 75% (vice 50%) for MTWs and more selective presence
Force structure	Conservative and robust approach—two MTWs + 50% SSCs + stay behind presence *or* rotation-based; correct shortfalls in ISR/precision munitions, lift, support force, and chemical, biological, and radiological detection and decontamination; expanded ability to support homeland security when committed to MTWs	Size for MTWs only (all else lesser-included); invest in critical enhancements to reduce platforms; eliminate and/or convert less critical forces, including in strategic reserve; allow dual apportioning, swing; greater reliance on Reserve components and allies
Modernization	Correct warfighting shortfalls; fully fund acquisition; increase basic science and technology, research and development, concept development and experimentation, and new starts	Forego/slow select new systems; increase ISR/precision munitions buys to reduce platforms; maintain science and technology, research and development; use greater hedging; leverage programs of allies
Force manning	Full manning of warplans/rotation base; greater manning in high-demand elements	Less than full manning, including rotation base; greater use of Reserve component augmentation; initiatives to civilianize military functions
Force management	Policies that allow readiness and predictability within service tempo rules; prioritized, predictable, and selective theater engagement plans	Greater use of substitutions; global resourcing of more selective theater engagement plans; new concepts for presence (basing, rotations, etc.)

Readiness	100% manning of warplan units, greater for high demand; resource optimum training; full funding of maintenance and infrastructure (C-1)	Full manning of key units, no overmanning; resource essential training; fund maintenance and infrastructure at lower levels (C-1/C-2)
Personnel	Improve pay, housing, medical, retirement, bases, and family programs	Maintain pay, housing, medical, retirement, bases, and family programs; seek efficiencies
Other areas	Sustain nuclear forces; exercise robust nuclear stewardship; expand counterproliferation	Reduce size and readiness of nuclear forces; sustain nuclear stewardship and counterproliferation efforts; reduce infrastructure

Key indicators for a fundamental review of this strategy and its resourcing:

- Inability to resource both MTWs at moderate risk (that is, capability and/or readiness shortfalls are clearly evident)
- Inability to sustain presence, engagement, and SSCs without unacceptable tempo levels
- Inability to support homeland security missions and two MTWs concurrently at moderate risk
- Chronic inability to meet modernization funding objectives (that is, inability to meet most urgent recapitalization needs and/or having to cancel needed programs to fund others)
- Inability to fund high-priority new starts
- Inability to sustain suitable levels of concept development and experimentation
- Inability to cope with technical surprise or emergency threats
- Chronic inability to meet recruiting and retention goals
- Deterioration of morale and quality of life
- Inability to maintain a credible, secure, and safe nuclear deterrent

Table 13–4. Strategy D. Engage Today to Prevent Conflict Tomorrow

Area	Fully resourced (low risk)	Potential tradespace (low-to-moderate risk)
Key policies	Deter/win two MTWs—current endstate and concepts of operation; 25% (vice 100%) SSC withdrawal for MTWs; expanded levels of SSCs, engagement and presence; limited DOD homeland security mission	Expanded levels of SSC/engagement and presence to deter/prevent conflict (including a second MTW); defeat aggression in one MTW; SSC disengagement policy of 50% (vice 25%)
Force structure	Conservative and robust approach—two MTWs + 75% SSCs + stay behind presence *or* rotation-based; correct shortfalls in ISR/precision munitions, lift, support force, and chemical, biological, and radiological detection and decontamination; expanded ability to support homeland security when in MTWs	Size for expanded levels of presence, SSCs, and engagement and one MTW (second is lesser-included case); adjust presence concepts of operation to require fewer forces; greater reliance on allies; eliminate and/or convert less critical forces, including in strategic reserve
Modernization	Full acquisition funding; increase funding for basic science and technology, research and development, and concept development and experimentation (for low-end transformation)	Forego/slow select new systems buys; greater use of hedging; leverage programs of allies; invest in interoperability with allies
Force manning	Fully man units in rotation base and warplans; greater manning in high-demand elements	Less than full manning of warplan units (late deployers); greater use of Reserve component augmentation; initiatives to civilianize functions
Force management	Rotational rules that allow predictability within service tempo rules; allow for substitutions without difficulty; prioritized, predictable theater engagement plans	Some rotation rules; greater use of substitutions; global resourcing of more selective theater engagement plans; new concepts for presence (basing, rotations, etc.)

Readiness	100% manning of SSC/presence and warplan units, greater for high demand; resource optimum training, full maintenance, and infrastructure (C-1)	Fully man SSC/presence and key warplan units only; resource essential training; fund maintenance and infrastructure at lower levels (C-1/C-2)
Personnel	Improve pay, housing, medical, retirement, bases, and family programs	Maintain pay, housing, medical, retirement, bases, and family programs; seek efficiencies
Other areas	Sustain nuclear forces; exercise robust nuclear stewardship; expand counterproliferation	Reduce size and readiness of nuclear forces; sustain nuclear stewardship and counterproliferation efforts; reduce infrastructure

Key indicators for a fundamental review of this strategy and its resourcing:

Inability to sustain expanded presence, engagement, and SSCs without unacceptable tempo levels

Inability to resource one MTW at moderate risk (that is, capability and/or readiness shortfalls are clearly evident)

Inability to support homeland security missions, other peacetime demands, and one MTW concurrently at moderate risk

Chronic inability to meet modernization funding objectives (that is, inability to meet most urgent recapitalization needs)

Inability to fund high-priority new starts

Inability to sustain modest levels of concept development and experimentation

Inability to cope with technical surprise or emerging threats

Chronic inability to meet recruiting and retention goals

Deterioration of morale and quality of life

Inability to maintain a credible, secure, and safe nuclear deterrent

MTWs, and Strategy D would likely eliminate the requirement to be able to prosecute a second MTW.

Given unconstrained resources, Strategy A would maintain current levels of U.S. military involvement in presence, engagement, and SSCs; Strategies B and C would adopt a more selective approach to engagement and SSCs (but not overseas presence); and Strategy D would expand U.S. military involvement in all of these areas. In a resource-constrained environment, these strategies would make different tradeoffs. Neither Strategy A nor D would reduce its levels of commitment to presence, engagement, and SSCs. By contrast, the two strategies that seek to be more selectively engaged (B and C) might reduce either the level of overseas presence or the resources devoted to presence.

With regard to policy governing the disengagement of U.S. forces from SSCs to be redeployed to MTWs, in a resource-rich environment all of the strategies would be likely to adopt a more conservative approach than today's policy, which expects 100 percent of U.S. forces to be withdrawn from SSCs and redeployed to MTWs in accordance with CINC timelines. When sufficient resources are provided to keep risk at a low level, three of the four strategies (A, B, and C) might call for only 50 percent of the U.S. forces deployed to SSCs to disengage to go to a major theater war.[2] Given Strategy D's emphasis on the importance of U.S. involvement in SSCs to prevent and deter larger conflicts, it might adopt an even more conservative approach, perhaps that only 25 percent of U.S. forces would disengage and redeploy to an MTW. Similarly, in a resource-constrained environment in which the objective would be to accept no more than a moderate level of risk, Strategies A, B, and C might adopt the more optimistic assumption that 75 percent of U.S. forces would be able to redeploy to the MTWs within CINC timelines, while Strategy D might assume that 50 percent could do so.

All of the strategies call for continued DOD support to homeland security missions, but Strategy B explicitly gives these missions—particularly national missile defense and dealing with terrorism involving weapons of mass destruction—higher priority than do any of the other strategies. In the absence of resource constraints, all four strategies would aim for low risk in this area; in the presence of resource constraints, most would accept up to a moderate level of risk.

Force Structure

Given full resources, each of the four strategies might use a similar methodology to develop a low-risk force structure; this is not to say that

the resulting force structures would be the same, only that the approach to deriving them would use the same principles in each case.[3] Specifically, to derive a notional low-risk force, the working group used two calculations and adopted the larger of the two resulting forces: Approach 1 tallied forces required to deter and win two overlapping MTWs with low risk (derived from a broader scenario set), *plus* forces that would remain in SSCs, based on the level of SSC involvement consistent with the strategy (current, selective, or expanded) and on the strategy's most conservative assumptions about disengagement (50 percent or 25 percent of U.S. forces disengage and redeploy to MTWs), *plus* forces that would stay behind to provide limited deterrence and response capabilities in unengaged theaters. Approach 2 tallied the rotational forces involved in presence, *plus* rotational forces involved in SSCs, *multiplied by* the appropriate service rotational factor (for example, 4:1 or 5:1).[4]

In addition to determining the greater of these two measurements, a number of capability enhancements to address identified warfighting shortfalls would be considered in such areas as intelligence, surveillance, and reconnaissance; precision munitions; strategic lift and prepositioning; support forces; and chemical and biological defenses.[5] In deriving a low-risk force, one would also expand the U.S. military's ability to support homeland security missions concurrently with fighting one or more major wars abroad; this might involve expanding the pool of specialized assets that would be tasked for both homeland security and warfighting missions. One might also consider building additional force structure or shifting additional units from the Reserve to the active components for high-demand assets that are most likely to experience operations and personnel tempo strains in peacetime. All in all, this is a very conservative approach to sizing U.S. conventional forces and would yield force structures significantly larger and more expensive than today's.

In a resource-constrained environment, the four strategies would take somewhat different approaches to delineating the force structure tradespace—that is, determining the tradeoffs or approaches to be considered in an effort to reduce costs while accepting no more than moderate risk. For Strategies A, B, and C, the tradespace candidates might include both dual-apportioning and swinging some forces between two different MTWs; greater reliance on the Reserve components in MTWs; greater reliance on allies in MTWs; increased investment in ISR, precision munitions, and other capability enhancements to increase combat effectiveness while reducing combat platform and unit requirements; elimination or

conversion of less critical forces to fill higher priority requirements (within and between services), such as warfighting capability shortfalls or low density/high demand units; and altering the size and composition of the strategic reserve. Here, the focus is on reducing force structure requirements, primarily through different approaches to meeting the requirements of a second MTW. It should be noted, however, that many of these approaches are already reflected to some degree in today's force structure and planning. In a resource-constrained environment, Strategy B would add to this list one more candidate: it would size forces just for warfighting, transformation, and homeland security, while treating presence, engagement, and SSCs as lesser included cases. Strategy C would offer a variation on this theme: it would size forces only to meet warfighting requirements, treating all other missions as lesser included cases.

Strategy D would define the force structure tradespace very differently. It would consider sizing forces for expanded levels of presence, engagement, and SSCs, plus one major theater war, treating a second MTW as a lesser included case (and effectively dropping the two-MTW standard); modifying concepts of operations for overseas presence to allow greater use of force substitutions and to reduce the associated force structure requirements; eliminating or converting less critical forces to build the density of assets that are in highest demand in peacetime; reducing the size of the strategic reserve; and increasing reliance on allies across the spectrum of operations, especially in SSCs. Here, the focus is on tailoring the force to meet peacetime demands while maintaining a core capability to fight and win a single MTW.

The working group examined many of these issues in detail to determine which ones might merit further development in the QDR. Both the analytic approach and the results of that effort are described in chapter 8 on key force structure and capability issues.

Modernization

One of the most significant areas of difference among the four strategies is that of modernization. Whether sufficient resources are provided to keep risk at a low level, or resources are constrained, the strategies offer markedly different defense investment priorities. Strategies A and C would balance the objectives of urgent recapitalization for parts of the force with long-term transformation of the force overall to meet future challenges, such as the potential rise of a near-peer competitor in 2025 or beyond, or the nearer-term prospect of the use of antiaccess strategies and asymmetric means by regional adversaries. Both of these strategies would seek to

balance funding across several competing investment priorities: S&T, R&D, current acquisition programs, new starts, concept development and experimentation, and critical warfighting enhancements. In a resource-constrained environment, both would consider similar candidates to define modernization tradespace, including foregoing or slowing procurement of selected systems and retaining legacy systems with upgrades or service life extension programs (SLEPs); increasing investment in ISR/precision munitions enhancements and reducing the number of shooter platforms procured; greater use of a hedging approach that would keep some new systems in the R&D and limited prototyping phase until there was strategic warning of the threat; and taking advantage of allied R&D and acquisition efforts in areas in which allies or partners have equivalent or superior technologies.

In contrast, Strategy B would accelerate funding for more transformational systems—those aimed at maintaining U.S. military superiority in the face of a future near-peer competitor or a lesser adversary employing antiaccess strategies or asymmetric means. These systems typically might have some or all of the following characteristics: integrated architecture, extended ranges, reduced manning, increased mobility, enhanced precision, and stealth. Strategy B would reduce or cancel buys of non-transformational systems, to free up resources for higher priorities, such as increased investment in S&T, more robust concept development and experimentation, and new starts, such as national missile defense. In a resource-constrained environment, Strategy B would focus on increasing investment in generation-after-next systems for a smaller but more capable force, including increased S&T, R&D, and concept development and experimentation; reducing or eliminating investment in selected next-generation systems inconsistent with the goals of transformation, while retaining some legacy systems with upgrades or SLEPs to bridge the gap to generation-after-next systems; increasing investment in ISR/precision munitions enhancements while reducing the numbers of shooter platforms being procured; and leveraging the R&D and acquisition efforts of allies in areas in which they have equivalent or superior technologies.

Strategy D would adopt a very different set of modernization priorities. It would reduce or cancel buys of more expensive, high-end transformational systems in order to replace aging platforms systematically to maintain a larger force. More specifically, Strategy D would favor procurement of additional numbers of proven systems, upgrades to existing platforms and systems, service life extension programs, capability enhancements such

as improvements to command, control, communications, computers, intelligence, surveillance, and reconnaissance assets, precision munitions enhancements, and force protection improvements. To the extent that Strategy D would invest in transformation, it would focus on the low end of the operational spectrum, such as new concepts and capabilities for overseas presence and smaller-scale contingencies. This strategy would focus on improving interoperability with allies and partners. In a resource-constrained environment, Strategy D would sacrifice procurement of transformational systems and some investment in S&T and R&D in order to recapitalize and sustain a larger force structure and a more assertive strategy of engagement.

Similarities among Strategies

Equally striking are the key elements of the integrated paths that do not exhibit much or any change across the strategies. Here, the fundamental differences were driven not by strategy but by resource assumptions: whether choices were being made in the context of constrained or relatively unconstrained resources. These factors suggest a host of choices that will be on the administration's plate in the next QDR, regardless of the strategy it chooses.

Force Manning

Given full resources to keep risk at a low level, each strategy calls for full manning of all units in warplans and the peacetime rotation base, increased manning in selected high-demand units and specialties, and increases in force generation capability. All told, this would translate into a significant increase in the total end-strength of the U.S. military. In a resource-constrained environment, all of the strategies contemplate less than full manning for so-called late deployers in major wars; less than full manning for the peacetime rotation base; no overmanning of high-demand assets; greater use and integration of Reserve component units and personnel; and initiatives to civilianize some military functions, such as finance and accounting, computers and information management, long-haul communications, maintenance, repair and refurbishment, and supply chain management.

This raises several crucial questions for QDR decisionmakers. First, should manning be increased in some types of units to reduce warfighting risk and peacetime tempo strains? Which types of units should receive highest priority for additional manning? Given economic and demographic trends, could this additional end-strength be recruited and retained?

Second, could the requirements for active-duty personnel be significantly reduced through greater use of Reserve component units and personnel, or the transfer of some functions from the military to the civilian sector?

Force Management

Each of the four strategies calls for force-management policies that would facilitate effective response to peacetime demands through predictable deployment windows consistent with service tempo rules. Three services—the Navy, Marine Corps and, more recently, Air Force—have adopted rotational force-management systems that enable them to meet this objective better under normal circumstances. The Army still faces enormous force-management challenges as it seeks to use a force designed and organized primarily for fighting major wars to meet a substantial and very different set of peacetime demands. Given full resources, each strategy also calls for a flexible force structure that facilitates substitutions within and across services and for meeting all CINC theater engagement needs as a priority matter. If resources are constrained, all of the strategies would envision greater use of force substitutions to manage peacetime tempo strains; more selective peacetime engagement by the CINCs and a resource allocation process that would prioritize CINC engagement activities on a global (rather than strictly regional) basis, perhaps resulting in reductions or cancellations of lower priority activities in one region to facilitate higher priority activities in another; and greater use of new basing concepts, crew rotation concepts, and force substitutions to reduce the force requirements associated with meeting peacetime engagement and presence demands.

This raises several crucial questions for QDR decisionmakers. First, would implementation of a rotational force-management approach similar to those used by the other services be beneficial for the Army? What would such an approach look like in practice? Second, what is an acceptable standard for cumulative time away from home (days per year or days per 2 years)? Should the same standard be used across the services? Under what conditions should this standard be waived in peacetime? Third, how can DOD put teeth in the theater engagement planning process to ensure that CINC engagement plans, in combination with other demands such as training and SSCs, do not create undue tempo strains on the force, and that resources are consistently allocated to the highest priority demands? Fourth, are there forward-basing or crew-rotation concepts that could reduce some of the requirements associated with meeting the overseas presence demands of a given strategy?

Readiness

In the readiness arena, the key choices are driven not only by differences in strategy but also by different assumptions about resource levels and priorities. With full resources, the goal would be full funding for manning, training, equipment, and infrastructure accounts, with the objective of achieving C–1 status for all units in warplans and for all high-demand units in peacetime (a force rated C–1 has only minor deficiencies that have negligible impact on its capability to perform required missions). In the absence of full resources, one might accept less than full manning for some units; full funding to meet essential (if less than optimum) training for required missions; less than full funding for spare parts, depot maintenance, and war reserve materials, and less than full funding for mobilization and support facilities. In short, the standard here would be adequate funding to maintain all units in warplans or in high demand at C–1 or at least C–2 status (a force rated C–2 has some deficiencies with limited impact on its capability to perform required missions).

This raises some critical questions for QDR decisionmakers. First and foremost, what should the force be ready for? The answer depends on what priority missions are set by the next defense strategy; this determination will go a long way toward identifying which units should be kept at what states of readiness. Second, what are the risks associated with less than full funding of the various readiness accounts? Third, are there any realistic management initiatives, such as commercialized or competitively sourced maintenance and logistics functions and other installation activities, that could reduce the costs of maintaining high levels of readiness?

People and Quality of Life

In the absence of resource constraints, all of the strategies would aim to make service in the U.S. military more competitive with working in the private sector, guarantee a middle-class life for all members of the All Volunteer Force, and enhance the personnel readiness of the force. In practice, this would mean further increasing the pay of military personnel, improving access to and availability of quality housing, improving the quality of the bases and facilities where military personnel live and work, providing a strong healthcare system, improving pensions and retiree benefits, and expanding and enhancing programs geared toward military families. In a resource-constrained environment, some would put such people and quality of life issues in the tradespace like any other issue and adopt the standard of maintaining the status quo or avoiding losing

ground in any of the specific areas listed above. They would also put even greater emphasis on exploring possible areas of reform or divestment that could generate cost savings.

This suggests several key questions for the QDR. First, should quality of life programs be in the tradespace? Given the centrality of people to the quality of the U.S. military and the challenges DOD faces in recruiting and retaining them, can the United States afford anything less than fully funding this aspect of the defense program? Second, can DOD provide comparable or higher quality goods and services to members of the military at reduced cost by fundamentally changing its approach in some of these areas, such as healthcare, housing, schools, and commissaries?

Other

With full resources, most of the strategies would contemplate enhancing sustainment and perhaps modernization measures for U.S. strategic nuclear forces, enhancing the current nuclear laboratories and stockpile stewardship capability, and expanding programs aimed at countering the proliferation of weapons of mass destruction. In a more resource-constrained environment, most of the strategies would contemplate further reducing either the size of the U.S. strategic nuclear arsenal or its level of launch readiness while seeking to delay major modernization decisions, and maintaining but not enhancing stockpile stewardship capability and counterproliferation programs. They would also consider ways of reducing the size or readiness of the strategic reserve of conventional forces.

In addition, all of the strategies would seek ways of further streamlining DOD by eliminating excess infrastructure through additional consolidation, rounds of base closure, outsourcing, and commercialization, as well as adopting more efficient business and management practices. Although much of the low-hanging fruit in these areas has already been picked during the last decade, we believe there are significant additional savings to be had if the administration, the services, and key members of Congress are willing to challenge political constraints that have traditionally hampered progress. Reaping substantial savings in this area would require breaking some zealously guarded rice bowls in the Pentagon, the services, Congress, and possibly the broader community of military retirees and dependents.

Several questions arise for the next QDR. First, what is the future vision for U.S. strategic nuclear forces? What is the appropriate nuclear posture and modernization program to support that vision within resource con-

straints? Should DOD anticipate cost savings or additional investment in this area over time? Second, what are the most crucial counterproliferation programs to be pursued in the next decade? Are some of these so essential that they should be kept out of the tradespace? Third, what kind of conventional strategic reserve is needed to support the defense strategy? Should DOD anticipate cost savings or additional investment in this area over time? Fourth, are there realistic ways to streamline infrastructure further (for example, with more base closures and elimination of other excess facilities), to increase efficiency in DOD business practices, and to reduce costs over time? Are the administration, the services, and the Congress willing to pay the political price for substantial savings in these areas?

Key Indicators

The final element of each integrated path is a set of key indicators, each of which, if present to a significant degree, should cause a fundamental reevaluation of a given strategy and the level of resources allocated to implement it. These key indicators would be signs of a substantial mismatch between strategy and resources that must be addressed if highly corrosive effects on the U.S. military are to be avoided. These include:

- inability to provide adequate resources for the required number of MTWs at moderate risk, due either to capability shortfalls or to readiness shortfalls;
- inability to sustain the required level of overseas presence, engagement, and SSCs without unacceptable tempo levels for LD/HD assets and other high-demand units;
- inability to support homeland security missions concurrently with other high-priority missions (for example, warfighting) at moderate risk;
- chronic inability to meet modernization objectives, such as the most urgent recapitalization needs, or having to cancel programs to fund others;
- inability to fund high-priority new starts;
- inability to sustain suitable levels of concept development and experimentation in support of transformation;
- inability to cope with technical surprise or emerging threats;
- inability to maintain a credible, safe, and secure nuclear deterrent;
- chronic inability to meet recruiting and retention goals;
- deterioration of the morale and quality of life of the force.[6]

If allowed to persist, these conditions would degrade the quality, capability, and readiness of the U.S. military and its ability to protect and advance national interests. Thus, as indicators, they can serve two very important purposes in the upcoming QDR. The first is to convey a clear message to the administration, the Congress, and participants in the re-

view that, with a couple of notable exceptions, most of these indicators exist today, suggesting that there is already a profound gap between the defense program and resources that have been made available to support it. This increasingly indisputable fact means that the next QDR cannot afford simply to refine the current approach, tweak the current defense program at the margins, or hope to muddle through. Rather, the next administration must take substantial action to increase defense spending, cut costs (without increasing risk to unacceptable levels), or ask the military to do less. This is the iron triangle described at the beginning of this volume that the administration will face in the 2001 QDR; it will require enormous political will and leadership to manage.

The second way in which some of these indicators could prove useful in the next QDR is to provide decisionmakers with a means of determining whether they have adequately closed the strategy-resources gap in the course of the review. Do modeling and analysis indicate that the chosen force structure can meet the strategy's warfighting requirements at moderate risk? Do they indicate that the force can sustain a strategy's anticipated level of peacetime operations within acceptable operations and personnel tempo levels? Do they indicate that the force can support homeland security requirements concurrently with warfighting requirements? Does programmatic analysis indicate that DOD will be able to meet its modernization objectives within the fiscal guidance? These key indicators can be used to focus analysis during the review on the most important judgments the administration will have to make in creating a sound defense strategy and a sustainable defense program.

Conclusion

If the administration wants to root its programmatic decisions firmly in strategy, it will need to develop a strategy-driven integrated path (or something akin to it) as a framework for decision. Such a framework would highlight both what a given defense strategy would require across the various elements of the defense program (force structure, modernization, manning, readiness, and so on) and what cost-saving tradeoffs (tradespace), if any, might be consistent with the strategy in each area. Putting the myriad programmatic decisions of the next QDR in such a strategy-driven context will be crucial to charting a sound and sustainable course for defense. Our comparative analysis of four different integrated paths also suggests a host of key questions that QDR decisionmakers will need to address, no matter what strategy is adopted by the new adminis-

tration. In order to answer the fundamental question of whether enough has been done during the review to bring the requirements of the defense strategy and the resources available into balance, the administration will need to develop a set of key indicators of a strategy-resources mismatch. We have offered a short list of such indicators as a starting point, and their message is sobering and clear: fundamental change is required now if we are to sustain the health and unmatched prowess of the U.S. military in the years and decades to come.

Notes

[1] The costs of the integrated paths also are likely to differ significantly. Although the working group was unable to estimate the total cost of any path, rough costing will be critical to support sound decisionmaking and to avoid inappropriate apples-to-oranges comparisons.

[2] These percentages are not exact; they simply indicate that one would expect a substantial portion of the force to be unable to withdraw from SSCs and redeploy to MTWs in a timely fashion. This could be the case if, for example, allies were either unwilling or unable to provide substitutes for withdrawn U.S. forces; if the types of forces involved could not be moved quickly or the necessary lift were not available; or if an American withdrawal of such critical forces as headquarters, communications, and logistics could cause the collapse of an entire coalition operation.

[3] For a more detailed discussion of a methodology for sizing conventional forces, see chapter 6 on force sizing.

[4] How rotational factors are derived is discussed in chapter 10 on peacetime operations.

[5] Shortfalls are identified in the DOD *Quarterly Readiness Report to Congress,* April–June 2000.

[6] Positive as well as negative changes in assumptions and conditions that underlie defense planning also must be taken into account by the review. Positive indicators that could have comparable significance include indicators that the primary threats for which DOD plans have decreased in size or lessened in nature; the prospect that new concepts of operation will allow the Armed Forces to achieve the same objectives with fewer resources; or favorable changes in allied capabilities.

Chapter Fourteen

Elements of Success for the QDR

by Michèle A. Flournoy

The Bush administration must make a more fundamental and difficult set of choices in the 2001 QDR than its predecessors did in previous defense reviews. It cannot afford to refine the current approach, tweak the current defense program at the margins, or hope to muddle through. The magnitude of the current strategy-resources mismatch, and the damage it will cause over time if not addressed, demand that the next administration increase the level of resources devoted to defense, work with Congress to expand and take advantage of potential tradespace to reduce costs while maintaining acceptable levels of risk, or change the defense strategy to reduce the demands being placed on the Armed Forces. This fundamental set of choices, the iron triangle of the next QDR, will require extraordinary leadership and a willingness to spend significant amounts of political capital on the part of the President, Secretary of Defense, and Joint Chiefs of Staff.

In reality, the administration may need to work all three legs of the iron triangle to bring defense strategy and resources into balance. While some increase in defense spending seems likely, it is highly unlikely that the increase will be large enough to close the projected $30–50 billion annual gap.[1] Therefore, any increase in the defense topline will have to be accompanied by efforts to identify potential tradespace—changes in the defense program that would reduce costs without incurring unacceptable levels of risk. Though some argue that there is little or no tradespace left after a decade of cutting budgets and forces, others make a persuasive case that there are still substantial efficiencies and savings to be had. Reducing excess infrastructure, reforming personnel management systems, and adopting better business practices are just a few of the examples frequently cited. Taking advantage of this tradespace may, however, be extraordinarily difficult for both the new administration and the new Congress. The new

civilian leadership in DOD must demonstrate willingness to make hard and perhaps unpopular choices. The military leadership must demonstrate willingness to be a fully accountable partner in stepping up to the most difficult choices. And the new Congress must, in some cases, put aside the politics of pork to enable the Pentagon to reduce or eliminate low-priority programs, close or convert excess infrastructure, and change inefficient ways of doing business. This is a tall order, but not an impossible one if the parties understand that the long-term health of the U.S. military hangs in the balance.

The final element in this equation is the defense strategy: what the President asks the Armed Forces to be prepared to do in time of war and in peace. If the combination of budget increases and cost-cutting measures are insufficient to close the projected shortfall, then the new administration will have to determine how to reduce the demands placed on the U.S. military without compromising American security.

In support of this effort, we offer the following primary recommendations to the new administration and those who will participate in the 2001 QDR. The first three recommendations address the nature of the strategy and policy reviews the administration should conduct early in its term to set a course on defense and national security issues. The others identify elements that will be critical to the success of the QDR and to making strategy-driven choices for America's security.

Three Interrelated Reviews

In order to set a true course in national security and defense matters early in its term, the new administration will need to conduct at least three interrelated reviews: the National Security Strategy Review, the Quadrennial Defense Review, and a strategic posture review.[2] Our recommendations for each follow.

The administration should make the National Security Strategy Review required by Congress a rigorous interagency exercise to establish the new President's national security vision and priorities, not just a pro forma exercise to produce a public relations document. The review should involve the principals of all of the relevant agencies and result in prioritized objectives and clear guidance for planning, resource allocation, and resource management among and within the national security agencies.

Second, given the profound set of choices that it must confront in the defense arena, the administration would be wise to pause and reconsider the objectives and scope of the Quadrennial Defense Review. Rather than

striving to complete a comprehensive defense strategy and program review in a matter of months, it might be more prudent to conduct a truly strategic review aimed at establishing a vision, setting broad DOD priorities, and deciding only the big ticket defense program issues, with a follow-on effort to conduct more in-depth analysis and develop a detailed implementation plan. Adopting this approach would require consultations with Congress to amend some of the substantive requirements in the QDR legislation, but the end result might be more in keeping with the type of review the legislation was meant to inspire.

Third, the administration should undertake a strategic posture review of U.S. policy with regard to both strategic nuclear forces and national missile defense. Such a review would meet the requirements of the Congressionally-mandated Nuclear Posture Review while enabling the administration to take a more comprehensive and integrated look at strategic offense and defense issues in the evolving security environment. Such a review would focus on establishing the long-term objectives that should guide U.S. strategic offense and defense policy and on articulating an implementation plan for realizing that vision. It would address a broad range of interconnected issues: nuclear and missile defense strategy, policy, force structure, operations, infrastructure, and how to deal with other countries, both allies and potential adversaries, to realize these policy objectives through arms control, unilateral actions, cooperative endeavors, and other means. (Chapter 12 addressed the range of issues that would need to be covered and outlines a number of concrete options for the administration to consider.)

These three reviews will undoubtedly overlap in time, issues covered, and people and organizations involved. All will need to be completed within the first year of the administration, and all will require a substantial amount of time and effort on the part of the new national security and defense team. To succeed in setting the administration's course, these reviews will need to be conducted in such a way that their results inform and reinforce one another.

The strategies and policies they produce will also need to be given teeth if they are to affect resource allocation within and among the national security agencies. This will require the administration to be as explicit as possible about where it wants to place emphasis and where and how it is willing to accept or manage a degree of risk. It must be clear about its *relative* priorities within the strategy. The twelve questions discussed in chapter 1 identify the principal defense strategy choices the new

administration will have to make; the defense strategy alternatives identified in chapter 5 provide a menu of options for the new administration. These options can be used singly or in combination to help jump-start the process of strategy development in the QDR. The DOD leadership must take ownership of the strategy early in the process, issue the strategy early in the QDR in the form of binding guidance to participants, and ensure that the strategy is consistently and rigorously enforced in the decisionmaking fora of the review.

Elements of Success for the QDR

There are several elements that will be crucial to the success of the next QDR—that is, crucial to addressing the strategy-resources mismatch and working the iron triangle. The recommendations that follow aim to distill some of these elements into actionable proposals for the new administration.

The 2001 QDR must be both strategy-driven and resource-constrained.

The QDR must be strategy-driven to ensure that the Nation uses the resources it devotes to defense (means) in the most effective ways possible to achieve its national objectives (ends). But ultimately, the review must be resource-constrained to be relevant. A review that assumes no budgetary constraints is not particularly useful to the President and Secretary of Defense, who must wrestle with hard choices about how to allocate limited resources to protect and advance U.S. interests and security objectives. The QDR must confront two broad strategy challenges: first, to make a strategy-based case for the resources required to meet national objectives at an acceptable level of risk, and second, to determine the best strategy possible, given the resources ultimately made available for defense, while explicitly assessing the risks, if available resources fall short of the ideal.

The administration should conduct a comprehensive assessment of the 2001–2025 security environment to develop a consensus view of the threats and opportunities for which DOD should plan, as well as those against which it should hedge.

This assessment should be one of the first steps taken in the QDR. It should draw on a broad range of sources and methods to capture not only areas of agreement on what is most likely but also issues of debate that suggest greater uncertainty. Chapter 2 offers such an assessment as a

starting point for further work in the QDR. As chapter 3 argues, particular attention should be paid to the rise of asymmetric threats to the United States, its interests, allies and forces.

The new administration should articulate a new and more compelling rationale for the size, capabilities, and resource requirements of the U.S. military.

In developing a new defense strategy, the administration should seize the opportunity to put forward a standard that will maintain U.S. military superiority into the future while offering a more compelling and complete rationale for U.S. conventional forces than two overlapping MTWs. Although it may well be prudent to retain the ability to conduct major military operations in more than one theater at a time, the administration should come up with a new formulation that cannot be equated to two particular scenarios, such as Iraq and Korea. This will require changing terms from MTWs to something else and capturing the broader range of priority missions that the services must be prepared to perform to protect and advance American interests, now and in the future. Basic definitions (of MTWs and SSCs, for example) need to be rethought, and force-sizing criteria and declaratory policy reformulated.

In translating defense strategy into criteria for sizing and shaping forces, the administration should take into account not only warfighting requirements, but also high-priority peacetime, homeland security, and transformation demands. The past decade of experience has made it abundantly clear that forces sized primarily for warfighting cannot meet the full range of peacetime demands without putting undue strains on the force. Our analysis suggests this would be true even if U.S. military involvement in SSCs were more selective. In addition, homeland security missions may place demands on U.S. forces that should be considered in addition to the warfighting demands they might have to meet concurrently. QDR planners should also take a second look at the size and shape of the force through the lens of future capability requirements to ensure that the force structure chosen in the next QDR puts the U.S. military of 2001 on the right path to becoming the U.S. military envisioned for 2010 and 2020.

The strategy guidance issued in the QDR should broaden the scenario set used for force planning and resource allocation in DOD.

The focus on two particular MTW scenarios, Iraq and Korea, as the primary basis for U.S. conventional force planning is highly problematic. These two cases are not representative of the range of plausible

MTW scenarios, now or in the future. The focus of U.S. force planning in the QDR should shift from optimizing the force for two particular scenarios to building a portfolio of capabilities that is robust across a broad range of anticipated and future threats. This will require broadening the scenario set to include a wider range of potential threats, end-state objectives, operational constraints (such as adversary use of anti-access strategies), and concepts of operations. The President and his most senior advisors should pay particular attention to the issue of appropriate end-state objectives for a broader range of MTWs, as these objectives will determine the range of military options available to the President in war and the assumptions that will guide the sizing and shaping of the Armed Forces.

The administration must be explicit in its defense strategy about the priority and objectives of transformation, the capabilities it wants the effort to yield, and the risks it is willing to accept along the way.

The strategy should articulate a prioritized list of future challenges or scenarios that transformation should seek to address (for example, the long-term rise of a peer competitor, the mid-term rise of more capable adversaries employing antiaccess strategies, the rise of asymmetric threats to the U.S. homeland) and the types of capabilities the effort should yield. The latter will need to be more specific than the very general "operational concepts" laid out in *Joint Vision 2020* if they are to provide actionable guidance for those involved in concept development, experimentation, research and development. The guidance on transformation should also be as explicit as possible about priority areas in which DOD should invest additional resources, and areas in which resources should be reduced, programs eliminated, and activities curtailed. It should at least specify the criteria that should be used to determine these, as well as the degree of risk the administration is willing to accept in the near term to pursue its transformation objectives. In chapter 11, Michael O'Hanlon identified two main schools of thought on the RMA and transformation: the C^4ISR school, which emphasizes the potential of modern computers, electronics, and related technologies; and the global reach/global power school, which envisions more sweeping and radical change across the whole spectrum of military technologies, organizations, doctrine, and tactics. Which school the administration identifies itself with will have profound implications for the size and shape of the DOD investment program.

The administration should take a fresh, top-to-bottom look at overseas presence as part of the QDR.

What does the administration's defense strategy mean for overseas presence? Do its requirements differ from current requirements? What are the best ways to meet these requirements? Should new ways of meeting overseas presence requirements, such as force substitution, additional forward stationing, or new operational concepts, be considered? As argued in chapter 9, these questions should be addressed for each of the key regions to which the United States deploys substantial forces—particularly Europe, East Asia, and Southwest Asia—as well as on a global basis.

The administration should seek to reduce the friction produced by conducting a robust level of peacetime operations while striving to maintain high levels of readiness for war.

As discussed in chapter 10, the administration should examine ways of both reducing the peacetime demands placed on the Armed Forces and increasing the available supply of forces for those peacetime operations to which it gives high priority. Specifically, it should consider the following options to reduce demand: change the criteria for intervention or participation in SSCs; increase use of civilian contractors, non-DOD government agencies, and nongovernmental organizations; limit SSC commitments based on a pre-determined force ceiling; reduce force commitments to long-duration SSCs, based on revised concepts of operations; or reduce the level of U.S. peacetime military engagement activities overseas. Several additional options should be considered to increase the available supply of forces for those peacetime missions given priority in a chosen strategy: addressing force structure inadequacies or imbalances to enhance military capability for priority peacetime missions; implementing new force management initiatives; or establishing a new funding mechanism for SSC operations.

The administration should adopt or develop a rigorous and transparent methodology for developing and assessing force structure options.

This has at least three dimensions. First, the administration will face several key decisions in sizing and shaping U.S. conventional forces to meet the requirements of its chosen strategy at acceptable levels of risk. It will require a methodology that explicitly addresses each of these decisions and offers QDR planners a transparent and replicable way to translate strategy into force structure options. DOD currently lacks such a methodology. We

believe there is great promise in the working group's approach described in chapter 8, and it is offered to the 2001 QDR as a way to proceed.

The second dimension is a rigorous and transparent methodology for assessing risk. Risk assessment is critical to the success of the next QDR and to sound defense decisionmaking more broadly, yet here again DOD lacks an adequate approach. Such an approach should integrate risk assessment in several areas, especially in force performance, force sustainability, force preparation for the future, and affordability. Risk should be treated explicitly in framing the decisions and reporting the results of the review. The risk assessment methodology presented in chapter 7 offers a strong foundation on which the QDR can build. Risk assessment during the QDR itself should strive to yield rough order-of-magnitude judgments of risk to inform the most important decisions; more detailed risk assessment should be pursued as part of the follow-on analytic effort.

The third dimension is a new overall approach to assessing force structure alternatives to support a given strategy. A more comprehensive, varied, and iterative approach to assessing force structure options is needed to optimize force structure across a broader range of scenarios and the strategy's highest priorities. In the longer term, DOD needs to increase investment in new modeling, analysis, and decision-support tools.

Here, an important caution should be kept in mind. The Bush administration cannot afford to use the need for better analysis and more rigorous risk assessment to postpone some of the most difficult defense decisions. Failure to confront the hard choices would be a decision in and of itself that would have dire consequences for the U.S. military. This situation reinforces a previous recommendation that the QDR should focus primarily on developing a strategy, setting priorities, and making the big program decisions, with a follow-on effort to flesh out and refine all of the programmatic details.

Once the administration determines its desired defense strategy, it should develop an associated integrated path.

As detailed in chapter 13, the integrated path would describe what the strategy would require if fully resourced, identify what may be in the tradespace consistent with the strategy if available resources are less than desired, and delineate the key indicators that can be used to assess whether, after working the available tradespace, a fundamental mismatch remains between strategy and resources. In so doing, it must rigorously and realistically assess potential tradespace candidates in every area of the defense program, paying particular attention to the specific issues and questions

outlined in chapter 13 in the areas of force structure, modernization, force manning, force management, readiness, people and quality of life, nuclear forces, business practices, and infrastructure. No aspect of the defense program should be disregarded, and no stone should go unturned.

Numerous force structure and capability issues may merit further analysis in the QDR as potential tradespace candidates, depending on the strategy chosen. Here, the objective should be to determine whether opportunities exist to reduce costs without accepting more than moderate levels of risk in priority areas of the strategy. Chapter 8 identified a number of potential candidates, including greater reliance on Reserve forces, tradeoffs between ISR/PM enhancements and shooter platforms, force mix in MTWs, new concepts of operations in MTWs, greater reliance on allies, the size and composition of the strategic reserve, and DOD investment priorities. Others might be drawn from the list of policy initiatives to reduce points of friction in the force, as described in chapter 10.

Other force structure and capability areas should be further analyzed in the QDR as potential areas for increasing investment to keep risk at low to moderate levels: warfighting enhancements, strategic lift and prepositioning enhancements, high demand assets in peacetime operations, and capabilities for meeting homeland security requirements concurrently with warfighting requirements.

The integrated path should also delineate key indicators to determine whether the gap between a desired strategy/defense program and available resources has been adequately addressed over the course of the review. These key indicators can serve two critical functions in the QDR. They can send a clear message to the incoming administration, the Congress, and participants in the review that there is already a profound strategy-resources gap that is beginning to have corrosive effects on the U.S. military and must be addressed. And they can serve as metrics to focus analysis during the review on the most important judgments the new administration will have to make in creating a sound defense strategy and program, and to assist QDR decisionmakers in determining whether they have adequately closed the strategy-resources gap over the course of the review.

Tough Choices

The administration must make some tough choices in the 2001 QDR if the strength and health of the U.S. military are to be maintained in the future. Although the new team may come into office with many competing

priorities, addressing the gap between the projected defense program and the level of resources devoted to defense will loom large as one of its primary responsibilities. Failing to close this gap would harm the U.S. military greatly, so the stakes are high. The next QDR will demand difficult decisions and a tremendous level of leadership and political will from the President, Secretary of Defense, and Joint Chiefs. With this responsibility, however, comes an historic opportunity to craft a defense strategy and program that will maintain the unparalleled quality and strength of the U.S. military and protect and advance American security well into the 21st century.

Notes

[1] Chapter 4 assesses both the budgetary trends that have contributed to the creation of this gap and the anticipated budgetary realities that will make it so difficult and so important to address in the QDR.

[2] Congress has mandated the NSS, the QDR, and a Nuclear Posture Review. The working group argues below that the latter should be broadened to include missile defense issues as well; hence the term strategic posture review.

Abbreviations and Acronyms

ABM	anti-ballistic missile
AEF	Air Expeditionary Force
APOD	aerial port of debarkation
CCD	campaign completion day
CENTCOM	U.S. Central Command
CINC	commander in chief
C^3	command, control, and communications
C^4	command, control, communications, and computers
CJCS	Chairman of the Joint Chiefs of Staff
CM	consequence management
COFFD	counteroffensive day
CONUS	continental United States
DBK	dominant battlespace knowledge
DCI	Defense Capabilities Initiative
DEAD	destruction of enemy air defenses
DOD	Department of Defense
EMP	electromagnetic pulse
ESDI	European Security and Defense Initiative
EU	European Union
EUCOM	U.S. European Command
ICBM	intercontinental ballistic missile
ISR	intelligence, surveillance, and reconnaissance
IT	information technology
JSTARS	joint surveillance, target attack radar system
LD/HD	low density/high demand
MEF	Marine Expeditionary Force

MEU	Marine Expeditionary Unit
MIRV	multiple independently-targetable reentry vehicle
MTW	major theater war
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCA	National Command Authorities
NDP	National Defense Panel
NDU	National Defense University
NGO	nongovernmental organization
NMD	national missile defense
NMS	national military strategy
NPR	Nuclear Posture Review
NSS	national security strategy
O&M	operation and maintenance
OPTEMPO	operating tempo
OSD	Office of the Secretary of Defense
PERSTEMPO	personnel tempo
PM	precision munitions
POM	Program Objective Memorandum
QDR	Quadrennial Defense Review
RC	Reserve component
R&D	research and development
RDT&E	research, development, testing, and evaluation
RMA	revolution in military affairs
RV	reentry vehicle
SALT	Strategic Arms Limitation Talks
SBIRS	space-based infrared satellite system
SDI	Strategic Defense Initiative
SFOR	stabilization force
SLBM	sea-launched ballistic missile
SLEP	service life extension program

SLOC	sea lines of communications
SNF	strategic nuclear forces
SPOD	surface port of debarkation
SSBN	nuclear-powered ballistic missile submarine
SSP	Stockpile Stewardship Program
SSC	smaller-scale contingencies
S&T	science and technology
START	Strategic Arms Reduction Treaty
TAMD	theater air and missile defense
THAAD	theater high-altitude area defense
TMD	theater missile defense
WMD	weapons of mass destruction
UAV	unmanned aerial vehicle
UN	United Nations

About the Authors

M. Elaine Bunn is a distinguished research professor in the Institute for National Strategic Studies at the National Defense University and previously served as the Principal Director for Nuclear Forces and Missile Defense Policy within the Office of the Assistant Secretary of Defense for Strategy and Threat Reduction.

Roger Cliff is an associate political scientist with RAND and currently is assigned to the Office of the Deputy Assistant Secretary of Defense for Strategy. His field of specialization is East Asian security affairs, including the military potential of the People's Republic of China.

Michèle A. Flournoy is senior advisor for international security at the Center for Strategic and International Studies and previously served as a distinguished research professor in the Institute for National Strategic Studies at the National Defense University and as the Principal Deputy Assistant Secretary of Defense for Strategy and Threat Reduction.

Richard L. Kugler is a distinguished research professor in the Institute for National Strategic Studies at the National Defense University and previously worked for the RAND Corporation and served as a senior official in the Department of Defense.

Lieutenant Colonel Kenneth F. McKenzie, Jr., USMC, is assigned to the QDR office at Headquarters, U.S. Marine Corps, and previously served as a senior military fellow in the Institute for National Strategic Studies at the National Defense University.

Michael E. O'Hanlon is a senior fellow in foreign policy studies at the Brookings Institution and teaches at both Columbia University and Georgetown University.

Lieutenant Colonel John J. Spinelli, USA, is assigned to the Strategy, Plans, and Policy Directorate at Headquarters, Department of the Army, and previously served as a senior military fellow in the Institute for National Strategic Studies at the National Defense University.

Captain Sam J. Tangredi, USN, is a senior military fellow in the Institute for National Strategic Studies at the National Defense University and previously served on the Joint Staff and in the Office of the Secretary of the Navy and the Chief of Naval Operations.

Christine E. Wormuth is special assistant for programs and legislation to the Under Secretary of Defense for Policy and previously served in the Office of the Assistant Secretary of Defense for Strategy and Threat Reduction.

This volume provides the foundation of the landmark research conducted by the Quadrennial Defense Review (QDR) 2001 Working Group, a project of the Institute for National Strategic Studies at the National Defense University. Sponsored by the Chairman of the Joint Chiefs of Staff, the five-member working group was established in September 1999 to help build intellectual capital for the upcoming QDR. The project was based on the assumption that a small effort conducted outside the Pentagon could serve as an independent, unbiased body to develop options and provide insights on critical defense policy choices for the next administration. With limited resources, the working group focused on areas where either bureaucratic or election year politics would make comparable efforts difficult or impossible, namely: defense strategy, criteria for sizing U.S. conventional forces, and force structure and capability issues. From its inception, the working group sought to provide options, insights, and recommendations for further analysis, not answers. As such, it was intended to jump-start the QDR process, not preempt it.

This book offers a comprehensive review of the broad strategic choices facing the new administration—without biases or distortions. A solid presentation worth the time of every American with more than a passing interest in national security.

—Barry M. Blechman

I appreciate the fact that this effort was courageous enough to point out in stark terms the trade-offs required for difficult policy choices. Senior military and defense leaders won't be able to hide from the reality of their decisions.

—Richard L. Armitage

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