New Challenges for Defense Planning

Rethinking How Much Is Enough

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Rethinking How Much Is Enough

Edited by Paul K. Davis
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ERRATA

Chapter 23, page 746, title to Table 5. Change to “Significance of Weapons vs. Different Target Categories; Implications for Defense Planning.”

Chapter 10, page 270, Table 2. Units are square meters, not square miles.

Chapter 12, page 385, end of first paragraph. Should have footnote: “We thank colleague James Quinlivan, who developed the material in this section in an earlier Army-sponsored study.”
This book contains 23 papers describing RAND studies of defense planning issues for the post–Cold War era. The rethinking of defense planning will go on for some years, but many of the ideas and conclusions presented here will continue to be quite germane. Some of the work discussed has already been influential, either in helping policymakers to shape the terms of debate or in providing information that contributed to choices made under uncertainty. While I have made no attempt to develop a monolithic "RAND view" on the many challenges defense planners face, readers will see in this collection themes and methodologies characteristic of RAND's recent defense-planning work. I hope these will be of interest to a broad class of individuals in government, military service, universities, and industry. My intention has been to seek papers that are problem-focused and interesting, that describe enough of the research and analytic reasoning to convey a sense of how the studies were conducted, and that should be useful for some years, despite also being topical.

Most of the research underlying the papers in this book was accomplished in RAND's three national-security federally funded research and development centers (FFRDCs): Project AIR FORCE, the Arroyo Center, and the National Defense Research Institute (NDRI), which are sponsored by the Air Force, the Army, and the Office of the Secretary of Defense and the Joint Staff, respectively. The book itself was organized in RAND's Defense and Technology Planning Department and was made possible with substantial corporate funds and through the auspices of the RAND Graduate School of Policy Studies. RAND's national-security divisions also contributed research-support funds to cover some of the administrative expenses.

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Part One

Introduction
Chapter 1

INTRODUCTION

Paul K. Davis

The end of the Cold War is requiring a profound and ongoing reassessment of defense planning. For the first time in decades, we are starting afresh on fundamental issues affecting the basic character and size of our military capabilities. These issues involve not only the classic question of “How much is enough?” but also questions about objectives; the range of capabilities we might need, given the changes in warfare and diversity of potential adversaries; and—more important than ever—how best to use the funds available for defense.

Addressing these questions is especially challenging: Planning accomplished now will determine capabilities for the first decade of the next century, but we assuredly do not know what the world will then be like. It is possible, of course, that U.S. military concerns will still revolve around major regional contingencies involving Iraq and North Korea, but that seems unlikely. We could instead see an approximation of the New World Order, a series of “Bosnias” and numerous states disintegrating into chaos, serious troubles around the periphery of a more conservative Russia, emergence of new military powers such as China or Japan, or some combination of the above.

These emerging questions and uncertainties are a boon for those involved in defense planning, because starting afresh is interesting and challenging. This book describes how a number of RAND analysts have been addressing the basic questions. The book is unusually broad, although not comprehensive. Each chapter is an independent essay, but with considerable cross referencing of ideas and arguments. The essays are somewhat personal, because they deal not only what the authors have learned from research and analysis, but with their “sense” of the issues. The intention, then, is to convey to readers what a number of senior RAND analysts currently see as the nature, state, and challenges of defense planning.

DIFFICULT QUESTIONS

These are some of the questions the book addresses:

- What kind(s) of world and what kind of scenarios should the United States plan for? What grand strategy should it adopt, and how should this affect defense planning?
What approach should be taken to deterrence, including deterrence of aggression against weak states in whose security the United States has interests—but not "vital" interests?

What are the implications for U.S. strategy and defense planning of proliferating nuclear, biological, and chemical weapons, and of delivery systems such as ballistic missiles?

What special challenges do peacemaking requirements pose?

How low can the defense budget go? Do we still have to maintain sizable forces and modernize them in a world with no other superpowers and no current threats comparable to the former Soviet Union or even the pre-Desert Storm Iraq?

What kinds of re-engineering should the defense department consider? Because of technological change, is it time to substantially reconfigure our forces and rework doctrine? Should roles and missions be reconsidered?

How should we think about tradeoffs between active forces and reserve forces, between force structure and modernization, between combat forces and support structure, and between variable-cost items such as force structure and "fixed-cost" items such as infrastructure?

Is it time to rethink the process of defense planning because assumptions, methods, and images rooted in the Cold War are still so embedded in the very fabric of the Planning, Programming, and Budgeting System (PPBS)?

RECURRING THEMES

As the authors address these questions, a number of recurrent themes echo from chapter to chapter. This is not coincidental, because those themes have become increasingly important in a great deal of RAND work. The most prominent of the themes are the following:

Planning Under Uncertainty. The central challenge for the Department of Defense is planning under uncertainty. In building the defense program, the United States should discard the traditional focus on one or a few sharply defined scenarios in favor of a many-scenario approach (indeed, a "scenario-space approach") that puts a premium on assuring future strategic and operational adaptiveness. This would require radical changes in mind-set and process, including a focus on capabilities for generic operations and missions potentially important in many contexts.

Dealing with Proliferation. A profound challenge for military planning is the proliferation of weapons of mass destruction (WMD) and related delivery systems. This challenge can no longer be left to foreign policy because of the extent of proliferation that is already happening. The United States will need
theater-level tactical ballistic-missile defenses, a range of counterforce options to deny launch of such weapons, and operations plans recognizing that such defenses will be imperfect and that U.S. forces may need to operate after being attacked with chemical, biological, or even nuclear weapons.

**Deterring Regional Aggression.** A continuing strategic challenge is conventional deterrence, which has historically proved very difficult—except when related to the most obviously vital national interests. The United States and its many regional allies must enhance the credibility of conventional deterrence in other cases (e.g., threats against Poland or the Baltic states, or in a “next Bosnia”) by facing and clarifying interests that in the past have not always been apparent until they were threatened, and by developing credible political, military, and economic strategies for punishing aggressors when we cannot, realistically, stop the aggression militarily.

**Capabilities-Based Planning.** Planning should focus on capabilities. It should look at how quickly various types of capability can be increased for a particular spending increment. Such planning is much better suited for encouraging diversity and adaptiveness than is “requirements-based” or “threat-based” planning, where attention dwells on meeting estimated needs for a few precisely defined threat scenarios.

**Competing Well and Leveraging Strengths.** To maximize effectiveness as budgets and force levels are reduced, the United States should make choices that preserve and exploit its areas of superiority, notably airpower, worldwide naval presence, strategic mobility, command and control (and the related potential for information dominance), forced-entry capabilities, and the exceptional quality of our systems and military personnel.

**Reducing the Discipline Gap.** Because the defense program now has so much less slack than in previous decades, the United States needs to be as realistic as possible in developing the defense program and to maintain “discipline” when implementing it. This means full funding of outyear programs and more success in implementing cuts in unproductive activities. Failures here will have a disproportionately large effect on combat capabilities because of the increasing fraction of the “fixed-cost” part of the defense program.

**Re-engineering.** The Department of Defense should plan an across-the-board effort to rethink and re-engineer combat forces, support forces, infrastructure, and the processes by which decisions are made about all of them. This will mean redesigning “divisions, doctrine, and depots” (and Air Force and Navy analogs), as well as the PPBS itself. These efforts must reflect the profound technological changes occurring in military systems and warfare, and the role of information dominance. The military-technical revolution is real.

**Peacekeeping and Peacemaking.** The Department of Defense should pay increasing attention to the special challenges—for doctrine, force structure,
training, and strategy—of multinational peacekeeping and, especially, peacemaking operations.

**Looking to the Next Century.** Increasingly, defense planning should focus on next-century contexts: These will include nations aspiring to superpower status and other adversaries who have adapted their strategies to avoid U.S. strengths. Related to this, the United States must consider its military power as an important instrument for *shaping the future environment*—for example, by maintaining capability and presence to avoid creating power vacuums, cooperating in multinational efforts to promote regional stability, or developing capabilities to trump those that might be available to would-be superpowers.

**STRUCTURE OF THE BOOK**

Without elaborating, let me now sketch briefly the structure of the book and the remaining individual chapters, which can be read in any order depending on the reader’s interests.

**Principles for Defense Planning**

Part Two of the book deals with principles for defense planning. My chapter, “Planning Under Uncertainty Then and Now: Paradigms Lost and Paradigms Emerging,” is an overview of much that follows. It reviews the classic methods of defense planning introduced during the McNamara era (1961–1968) and the transitional changes introduced by Secretaries Cheney and Aspin as the Cold War faded into history. It then lays out a set of propositions and principles to guide our approach in the next decade, including suggestions about how to re-engineer the Department of Defense itself. As the title of the book suggests, a continuing theme is the need to allocate resources wisely amidst a great deal of uncertainty, and in the context of competing demands for the marginal federal dollar.

The next chapter, “Objective-Based Planning,” written by Glenn Kent and William Simons, sketches an influential framework (sometimes called “strategies to tasks”) that has been used extensively by and in work for the Air Force, Army, Joint Staff, and CINCs. The theme is deceptively simple—there should be a coherent and visible set of relationships all the way from national military strategy down to operational objectives, tasks, and force-employment concepts for accomplishing them. Kent and Simons also describe a constructive relationship that should be created among the various types of civilian and military planners.

This relationship is reflected as well in the chapter that follows, “Institutionalizing Planning for Adaptiveness,” in which I summarize and extend work
done for the Joint Staff. In this chapter I propose radical measures to transform the way much defense planning is conducted. Taken together, these measures would significantly integrate strategic, program, and operations planning—both conceptually and to ensure that related civilian and military cultures are intermingled through planned rotations and exercises. The approach would modify many elements of the PPBS to encourage more use of campaign analyses (for diverse contingencies) and multiple measures of effectiveness relevant to wartime and peacetime mission accomplishment. Noting how easily the Gulf War could have been a disaster if Saddam Hussein had not paused in Kuwait, the chapter calls for the United States to develop the capability (including command-staff capability) for responding quickly and adaptively in times of crisis, rather than depending on on-the-shelf war plans or on having months to rethink the situation before combat occurs.

The last chapter in Part Two draws on a considerable body of historical research. "The Discipline Gap and Other Reasons for Humility and Realism in Defense Planning," by Kevin Lewis, argues that the defense program is now very tight and that further budget cuts would probably result in far greater reductions in fighting capability than is usually appreciated. This thesis is based on observing consistent historical differences between what is planned and what eventually transpires, differences traceable to a systematic "discipline gap"—i.e., a gap between what analysis tells us is a wise allocation of resources and what emerges as the result of political compromises, organizational inertia, and other factors that hamper implementation of early plans.

Planning at the Strategic Level

Part Three deals with planning and reasoning about the nature of future conflict, the nature and feasibility of deterrent strategies, the new military missions of the post-Cold War era, and arms control. My chapter on "Protecting the Great Transition" describes a 1991 RAND grand-strategy study to bring out a wide range of provocative options and issues. It illustrates generic methods for thinking seriously about "environment-shaping" and "hedging" strategies. Richard Kugler, in "Nonstandard Contingencies for Defense Planning," discusses the use of planning scenarios and the plausibility of many nonstandard contingencies that should be taken seriously in developing our plans. Kugler notes that today's uncertainty is strategic in nature, not merely one of operations and tactics, and he argues for an unprecedented degree of strategic flexibility that would allow the United States to expand or contract its military forces, and to channel them in different directions, depending on how events play out in the next decade. He also urges that development of the defense
program concern itself more with “generic mission-based planning” than with specific scenarios.

The next chapter reinforces concern about nonstandard scenarios. In “Improving Deterrence in the Post–Cold War Era: Some Theory and Implications for Defense Planning,” I summarize work on the potential reasoning (both strategic and psychological) of aggressors and the implications of that reasoning for deterrent strategy. Inconsistency is a central problem: Nations undercut deterrence by refusing in peacetime to recognize interests that are not direct and compelling, but then discover too late for deterrence to work that they have to confront aggression that has taken place. The chapter argues for a more expansive understanding of interests in peacetime (including contingency planning for difficult scenarios) and, in times of crisis, the willingness to take prompt and unequivocal measures that some may consider provocative or dangerous. That recommendation is in sharp conflict with the doctrine of overwhelming force, because rapid deployment of overwhelming force is often impossible.

The chapter that follows is a change of pace. Jennifer Taw and Bruce Hoffman provide a survey on “Operations Other Than War,” drawing lessons (both cheerful and sobering) from a number of case histories, including Bangladesh, Panama, and Somalia. Their chapter helps us visualize how very different some of the new missions and operations really are, and how easily an operation with achievable mission objectives can slip into becoming an operation destined for failure.

Part Three wraps up with two chapters dealing with ballistic missiles. In “Priorities for Ballistic Missile Defense,” Russ Shaver reviews the history of missile defense from the 1950s, explaining the conflicting strategic, economic, and technological considerations that have always proved troublesome in this domain. He makes the case that interest in national-level BMD will inevitably rise again (perhaps soon, because of proliferation) and that the DoD must therefore continue to establish an appropriate R&D base. He also discusses the pressing need for theater-level BMD to protect U.S. projection forces and friendly countries in crisis. Finally, in “Future U.S. and Russian Nuclear Forces: Applying Traditional Analysis Methods in an Era of Cooperation,” Dean Wilkening describes how strategic analysis can still be very useful even though the United States and Russia are monumentally uninterested in a strategic arms competition. There are practical problems to be dealt with, such as how to size the offensive and defensive forces so that new strains will not be created and so that even if new military crises arise between the United States and Russia, they will be less dangerous than they might otherwise be. Wilkening also touches on the potential implications of deeper reductions in a START II agreement, with and without ballistic-missile defense.
Planning at the Operational or Campaign Level

Part Four of the book describes studies and analysis with an operational flavor. Fred Frostic and Chris Bowie introduce this with “Conventional Campaign Analysis of Major Regional Conflicts,” which paints with a broad brush the “campaign perspective” of joint and combined warfare that plays a central role in planning for major regional contingencies.

The next chapter, “The Use of Long-Range Bombers in a Changing World,” by Glenn Buchan, describes how systems analysis has evolved to address the kinds of strategic and programmatic issues now important, including assessments of when stealth technology pays its way. The chapter highlights the critical but underappreciated role that long-range bombers now have in U.S. military strategy for conventional conflict, especially early in conflict.

The next chapter looks at a rather different kind of problem, the military challenges faced by one of the newly independent states of Eastern Europe. This is of considerable interest, because it deals with the more generic issue of how weak states can defend themselves, with and without some assistance. Their security is a matter of concern to the United States, but is not a “directly vital” national interest. In “A First Look at Defense Options for Poland,” Charles Kelley, Daniel Fox, and Barry Wilson consider a variety of military strategies that Poland might employ in establishing a significant, although not robust, defense against a hypothetical future Russian threat.

In “Not Merely Planning for the Last War,” Bruce Bennett, Sam Gardiner, and Daniel Fox describe a research project to understand the kinds of creative political-military strategies that could be used against the United States by opponents who have learned the lessons of the Gulf War, including lessons about U.S. airpower. They caution that the United States should be concerned about aggression involving fast-moving campaigns, campaigns with limited objectives, and campaigns in confused political-military contexts. They also discuss the problems created by weapons of mass destruction and ballistic-missile threats.

In “Extended Counterforce Options for Coping With Tactical Ballistic Missiles,” Richard Mesic examines the system problem of dealing with tactical ballistic missiles (TBMs) and the potential leverage of strategies and systems that would attack those weapons before launch or in the boost phase of flight. The technical and operational problems involved are substantial, but the analysis leads inexorably to the conclusion that such options are critical.

The last chapter of Part Four is another change of pace. “Military Issues in International Operations,” by Margaret Harrell and Robert Howe, gives an introductory survey of how international operations such as peacekeeping and peacemaking create demands for changes in training, equipping, controlling, and operating the U.S. Army.
Building the Defense Program

Part Five shifts attention to the building of the defense program, deliberately juxtaposing chapters on subjects as diverse as aircraft modernization and rethinking the mix and character of active and reserve Army forces. William Stanley’s chapter, “Assessing the Affordability of Fighter Aircraft Force Modernization,” is a virtual primer on the continuing problem of dealing realistically with procurement in defense plans when procurement cycles occur on longer time scales than the defense plans. He explains the methods that can and must be used to spread the cost of the next procurement cycle over time if modernization is to be affordable.

Ted Harshberger and Russ Shaver, in “Modernizing Airpower Projection Capabilities: Looking to Get More Out of Less,” give an integrated picture of what path the Air Force’s and Navy’s airpower modernization should probably take over the next two decades. They draw on a great deal of RAND analysis, but they stress the role of subjective judgments and the need to revisit those judgments over time as, for example, better information becomes available about the costs of future systems such as the F-22.

Following these two chapters on modernization and weapon-system affordability, the next chapter deals with force-structure issues. “Assessing the Structure and Mix of Active and Reserve Army Forces,” by Bernard Rostker, Bruce Don, and Kenneth Watman, summarizes a congressionally mandated RAND study exploring alternative ways to configure, train, and use the Army National Guard forces in a “total-force” approach.

Forces, of course, are useful only if they can be deployed to where they are needed. David Kassing’s chapter, “Strategic Mobility in the Post–Cold War Era,” reviews strategic mobility programs and issues, including lessons learned from the Gulf War. It ends with an emphasis on the need for the DoD to take more of a fort-to-foxhole approach in its management of strategic mobility and the need for much better decision-support systems to ensure efficient and adaptive uses of our mobility systems in times of crisis.

Next, we have a chapter dealing with the important area of logistics, which is often given short shrift in public discussion of defense planning, despite its military significance and enormous impact on the DoD budget. “Reinventing the DoD Logistics System for the Post–Cold War Era,” by Rick Eden, John Dumond, John Folkeson, John Halliday, and Nancy Moore, is an overview of much recent RAND work to rethink fundamentals of logistics for the Air Force, Army, Joint Staff, and OSD, drawing heavily on the last decade’s experiences from American industry, which has been taking radical measures to improve productivity. The authors stress that order-of-magnitude improvements can be achieved in the effectiveness of some DoD logistics systems.
Part Five ends with a chapter dealing explicitly with economic issues. In "Defining a Balanced Investment Program for Coping with Tactical Ballistic Missiles," Richard Mesic describes the kinds of insights parametric cost-effectiveness analysis can provide at the outset of a process that may take a decade or more, insights about what kinds of systems might plausibly be both effective and affordable if the requisite technological capabilities could be developed. The general methods used in this chapter have broad application to defense planning in an era of difficult choices and economic pressures.

With this background, then, Part Two opens with a broad discussion of principles for defense planning.
Part Two
Principles for Defense Planning
Chapter 2

PLANNING UNDER UNCERTAINTY THEN AND NOW:
PARADIGMS LOST AND PARADIGMS EMERGING

Paul K. Davis

Planning under uncertainty has long been a theme of secretaries of defense, but
the principles and analytic methods for planning under uncertainty should now
change radically, especially since planning around two specific major regional con-
tingencies (MRCs)—one in Korea and one in the Persian Gulf—no longer makes
sense and will probably not long be sustainable. This paper reviews classic planning
and important transitional changes introduced by Secretaries Cheney and Aspin. It
then offers controversial propositions about what should come next. The paper ar-
gues for basing planning on objectives of environment shaping, deterrence
(including deterrence of aggression against nonvital interests), timely and adaptive
crisis response, and long-term strategic flexibility. It stresses "capability-based plan-
ing" and chunky marginal-analysis methods as a replacement for "requirements-
based planning," which is overfocused on particular threats, scenarios, and measures
of capability. The paper reviews the current program and concludes that—so long
as major combat formations and support structure are organized as they are to-
day—the overall force structure and budget recommended by the Clinton adminis-
tration in 1993 are about right. However, it is in fact time to rethink fundamen-
tally how to size and configure our major formations and support structures. How
large need they be and for what next-century missions should they be designed?
How can they cope with chemical and biological weapons? What mix of active and
reserve forces should we use for the new era's range of wartime and peacetime mis-
sions? How much and what kind of support structure and infrastructure is needed?
The traditional question of "How much is enough?" should be replaced by "What
kinds of capabilities will be needed for the full range of plausible missions, and
what mix is it prudent to buy when there are competing national demands for pub-
lic-good dollars?" The United States now has the luxury of being able to buy less
"catastrophic" insurance, but needs to have more explicitly "comprehensive" insur-
ance at a good price. Much of the next decade's challenge will be to find ways to
have that coverage at a reasonable price tag. This will require a good deal more re-
engineering of the posture than has been attempted so far.

INTRODUCTION

It is a cliché that defense planning in the post–Cold War era must change
fundamentally to reflect the new geostrategic context. There are, however,
many misconceptions about what has and has not changed. In particular, it is
by no means only in the post–Cold War era that the Department of Defense has recognized the need to plan under enormous uncertainty and to build defense capabilities flexible enough to cope with unforeseeable future contingencies. To the contrary, this has been a recurring theme for over three decades. What has changed, and what is still changing, is how the DoD does so—e.g., how it goes about establishing, assessing, and justifying defense programs and postures. Part of this is addressing the perennial question, "How much is enough?" (Enthoven and Smith, 1971). Another part is assuring appropriate operations planning and the ability to adapt quickly in crisis (Davis, 1994b).

This paper begins by reviewing Cold War defense-planning concepts and strategy, along with their successes and failures. It goes on to describe the substantial transitional changes introduced by Secretaries Cheney and Aspin. It then contrasts current concepts and strategy with what may be needed in the near future. The result is to contrast the "paradigms lost"—i.e., the paradigms that no longer serve us well—with the new ones that have emerged and others that are still taking shape.

THE CLASSIC (COLD WAR) DEFENSE-PLANNING APPROACH

Origins

The defense-planning approach that can now be considered "classic" was developed under Secretary Robert McNamara in the early 1960s. McNamara recognized the challenges of doing organized planning under uncertainty, notably the need for defense programs to provide capabilities that would eventually be used in unforeseen contingencies. By the end of 1961 (after the Berlin crisis) it seemed clear that general war with the Soviet Union was unlikely, although deterring Soviet expansion remained critical. Indeed, a large study conducted for McNamara in 1961 identified 16 theaters in which the United States had military commitments, in 11 of which U.S. forces might be needed. The Soviets were involved in only some of these contingencies.

How does one plan against so many possibilities? And even if one has developed a concept for what is needed (i.e., for establishing "How much is enough?"); how does one explain and justify that concept—to the Congress and, ultimately, the general public? This was what McNamara had to address.

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1See Kaufmann (1982, 1986, 1992), McNamara (1968a,b), and Davis and Finch (1993: chap. 2 and apps. A and B).
The Grand Concept

The approach the DoD took from those early days in the 1960s until recently can be described abstractly as follows, with some secretaries giving more or less emphasis to particular items:

1. Overall force structure (and the size of the defense program) was based and justified in terms of the most stressing identifiable threat scenarios. In the early 1960s, these were the Soviet threat (primarily to Central Europe), the Chinese/North Korean threat, and a lesser contingency such as one involving Cuba or Southeast Asia (nominally, a “2-1/2 war strategy”). Through most of the 1980s, the emphasis was on a global war with the Soviet Union, with Europe’s Central Region and Iran as the principal land theaters.

2. The analytic “requirements” for total force structure were derived for important, credible, defensively oriented, high-minded, and affordable military objectives—notably, deterring aggression against our allies and other pivotal nations. Thus, the objective was to hold or restore the border in our defense, e.g., of West Germany and South Korea. Or, at least, to deny the enemy confidence of victory.

3. Since the nuclear deterrent was the paramount instrument for avoiding general war with the Soviet Union, certain cost-cutting risks were accepted in defining the “requirements” for conventional ground and air forces. In particular, air and ground forces were sized for successful initial conventional defense under bad, but not worst-case, assumptions. For example, it was assumed that NATO would mobilize cohesively and fight effectively, thereby not needing a large operational reserve. Requirements were based largely on a short war, with relatively little planning for long wars or counteroffensives, both of which would have been expensive.

And, particularly important for maintaining diversity and coping with uncertainty:

4. Having sized overall structure largely in terms of the most stressing threat, the original idea was then to “fill in” by acquiring specialized capabilities that might be needed for other scenarios, and to establish a strategic reserve suitable

---

2U.S. operations planning was not always defensive. For example, in 1962 and 1963 the United States planned and exercised for a possible invasion of Castro’s Cuba. Khrushchev had some basis for claiming success in the Missile Crisis, since the United States agreed not to invade Cuba (Garthoff, 1989; Reeves, 1993).

3A confusing point here was that secretaries of defense often spoke of the total force structure determined by the most stressing requirements as being adequate to deal with “lesser included cases.” While this did not logically exclude the “filling in” mentioned here, it did rather undercut its perceived priority.
for varied contingencies worldwide along with adequate strategic mobility forces (airlift, sealift, and prepositioning ships).\(^4\) McNamara’s Office of Systems Analysis worked to formulate this elaborate program, but the war in Vietnam and other factors reduced its funding. It was not until the Carter and Reagan years, under Secretaries Brown and Weinberger, that the DoD was more successful in this regard.

5. Given defense programs consistent with the overall force structure justified in this way, the Secretary of Defense then charged the military services, the Joint Chiefs of Staff, and the various CINCs with preparing operationally not only for the principal threat scenarios (those used to justify overall force structure), but also for a wide range of smaller contingencies. These exhortations were common over three decades of secretaries. Under Schlesinger and Cheney, they were further supported by having multiple planning scenarios (one each for a number of different theaters).

Figure 1 summarizes the grand concept schematically. For good reason it does not look much like traditional depictions of the Planning, Programming, and Budgeting System (PPBS). The shaded items were typically informal processes, relatively invisible except within portions of the Office of the Secretary of Defense (OSD) and the Joint Staff.\(^5\) In particular, it was not always appreciated from outside the DoD (or even from many portions within it) that the planning scenarios were carefully chosen to balance a range of considerations, including the money available for defense.\(^6\) Secretaries of defense are expected to argue for a higher DoD budget, but they are also members of the President’s cabinet with broad national responsibilities. Ultimately, planning defense capabilities under uncertainty is deciding on how much insurance to buy against unlikely but plausible events. There is no rigorous and objective means for judging how much insurance is enough when there are competing demands for

\(^4\)McNamara created the Strike Command (U.S. STRICOM) in 1961 for the contingency-oriented reserve in the United States. He proposed extensive procurement of airlift and sealift, including fast-deployment logistics ships (FDLs) analogous to the maritime prepositioning ships of the current era. The C-5 and C-141 programs proceeded, but were significantly underfunded; Congress never procured the FDLs. STRICOM proved ineffective, in part because of conflicts with the services over roles and missions as then defined (see Powell, 1993:xi and Peters, 1993:12), and in part because Vietnam created demands for many of the forces; STRICOM was disbanded in 1971.

\(^5\)It was led to make these “offline” processes explicit as the result of a discussion of mutual experiences with Deborah Christie, then in OSD’s office of Program Analysis and Evaluation.

\(^6\)See Builder (1993) for a less charitable discussion of the traditional planning approach. See Builder and Dewar (forthcoming) for discussion of different planning methods.
Figure 1—Traditional Approach to Choosing Planning Scenarios

the same public money. As a result, subjective considerations can and should enter the problem.

Figure 1 also suggests that part of choosing defense planning scenarios is assessing their utility for managing the department as a whole (e.g., for assuring that the services' programmed combat and support-force capabilities have a rational relationship to one another by requiring all of them to be able to meet the requirements of a common scenario). Also, the choice of scenarios reflects judgments about whether they will be useful in creating "requirements" leading to capabilities desired for reasons going beyond details of the specific scenario. For example, if procuring more strategic airlift is important in many contingencies, the standard planning scenario should stress airlift capabilities. Or, if
one wants to assure having some amphibious-assault capability, then one can build an associated operation into that scenario, even if doing so is less than entirely natural.

Given the choice of planning scenarios by OSD, classic defense planning has allowed for a systematic process—seldom as neat as pictured here, to say the least—of translating the scenarios’ challenges into operational objectives, operational strategies, mission requirements, defense programs, and other actions. As the process proceeds and as risks, costs, and constraints become clearer, there are often adjustments as suggested in Figure 2. Thus, the overall process is iterative (consistent with resource-programming techniques introduced by McNamara). To be sure, much vitriol is spilled when iterations occur (e.g., with accusations, sometimes valid, that the government is rationalizing inadequate capabilities), but they reflect the prioritizations that occur in a democratic process.

Some of this may seem bizarre to those who believe that planning should proceed top down from “objectives” through “requirements” to programs and budgets, but the reality is that decisionmakers must avoid establishing objectives or “requirements” that they cannot meet because of other economic demands. It is not accidental that DoD has never claimed (even in the days of the nominal “2-1/2-war strategy”) an objective of being able to fight and win two major regional conflicts starting at precisely the same time—even though adversaries might plausibly orchestrate their aggressions. The implication of this objective might be a “requirement” to double the airlift and sealift fleets. Off line, then, and quite informally, judgments have been made that the price of that particular insurance is too high.

Analytic Paradigms and Methods for Standard Contingencies

OSD’s Analytic Methods. Given the grand concept, how did DoD actually develop the various conventional-force requirements? As is so often the case, the devil was in the details and there was a great deal of cleverness, art form, and strategic judgment used—above and beyond that associated with the offline processes of Figure 1. In practice, the methods focused heavily on “standard” contingencies, notably defense of the Central Region. A new OSD or Joint Staff analyst learning the trade in the 1970s or 1980s would have been told something like the following about that problem (OSD, 1979a, Thomson, 1988):\(^7\)

\(^7\)Analysis of non-NATO contingencies was less well developed until the late 1970s. Also, in considering Chinese contingencies, such as an invasion of Taiwan or South Korea, there was more reliance on the nuclear deterrent, although this may or may not have made sense.
Figure 2—An Iterative View of Classic Planning

- **Focus primarily on ground forces**, since war will be determined largely by armored combat on the ground. Air forces are important, even critical, but should not be counted upon to compensate for other problems.

- **The key is to develop “build-up curves” for the Warsaw Pact threat in a variety of scenarios.** As part of this, characterize ground-force capabilities in armored-division equivalents (ADEs), which account for gross differences among divisions in quantity and quality of combat equipment. Assume equal quality of personnel, even between active forces and reserve-component forces, but assume reserve-component forces cannot be deployed until after a training time consistent with their national doctrine.

- From among the possible scenarios, **pick a planning scenario that severely stresses NATO in ways that can be redressed with feasible and affordable defense programs.** Recognize that choosing a defense planning scenario is one of DoD’s principal functions and that the choice must balance a number of strategic and budgetary considerations.

- **Use analytic rules of thumb**, rooted in more detailed war gaming and analysis, to establish NATO force requirements. Typically, this means requiring
likely or “optimal” force-employment adaptations by theater commanders. The results often illuminated a host of problems invisible to the cruder analysis—particularly problems related to operational strategies, force employment, and arms control (Davis, 1988a,b; Kugler, 1991; Hillestad and Watman, 1992).

Paradigms and Methods for Nonstandard Contingencies

Throughout most of the Cold War there was little in the way of paradigms or methods to guide defense planning for nonstandard contingencies (i.e., contingencies other than the specific DoD planning scenarios). There were many individual studies, but no general and widely understood methodology.11 The studies often worked at a level of abstraction such as buildup curves, without operational details.12

Let us now review some of the DoD’s efforts to plan for flexibility. Whether or not there was a general methodology, how did DoD do? The answer is mixed.

CHRONOLOGY OF COLD WAR EFFORTS TO ASSURE FLEXIBILITY

Good Ideas but Failed Efforts in the 1960s and 1970s

Despite the grand concept and the intentions of McNamara and his successors, the United States was not very successful during the 1960s and 1970s in building defense capabilities (or flexible operations plans) for diverse contingencies—i.e., in “filling in” as discussed in items 4 and 5 of the grand concept. Except for the Vietnam period, during which the United States eventually developed a vast array of specialized units and logistical capabilities, the preponderance of effort focused on “the principal threat,” that of a Warsaw Pact invasion of Western Europe and possible broader war.

11Late in the Cold War, RAND developed such a methodology and the related RAND Strategy Assessment System (RSAS) under the sponsorship of OSD’s Director of Net Assessment, Andrew Marshall. It emphasizes analytic war gaming and multi-scenario analysis (see, e.g., Davis, 1988a and citations in Bennett, Gardiner, and Fox, 1994).

12On a personal level, it was troublesome, in the period 1979–1981 when I worked in OSD on programs for what has become USCENTCOM, that program analysis for Southwest Asian scenarios had to be twisted into forms recognizable to a community familiar primarily with NATO-oriented analysis, when the real analysis of my office depended so heavily on a joint-campaign style of thinking and region-specific details.
What went wrong? The most important causes of failure were probably these:

- Congress rejected critical elements of McNamara’s proposed defense program, which it saw as having the potential to make the United States into a global policeman.
- The Vietnam War sucked up enormous energies and left no enthusiasm for optional contingencies that might be unpleasant.
- The military departments never bought into the concept of planning seriously for uncertainty, instead preferring to focus on the principal threat, plus particular crises as they arose.
- The Secretary of Defense and OSD focused too exclusively on strategic and programmatic planning, paying too little attention to operations planning and capabilities (Davis and Finch, 1993). This was exacerbated by the level of analysis, which tended to stop with numbers of divisions and the like without considering adequately the many other capabilities and preparations necessary to fight specific wars, even lesser contingencies.

The failure of the military organizations to explicitly buy into planning for uncertainty was particularly important. When resource decisions had to be made, when choices had to be made about training orientation, or when individuals thought about career-enhancing assignments and focuses, the tilt was toward Europe’s Central Region or, before 1969, Vietnam. Important exceptions here were the Navy, Marines, and Special Forces (de-emphasized after Vietnam).

Secretary James Schlesinger recognized the narrowness of de facto planning and exhorted a broader view by employing multiple planning scenarios similar to the Illustrative Planning Scenarios (IPS) used under Secretary Cheney seventeen years later. These included a variety of large and small regional conflicts. Again, however, the exhortations were not effective.

To illustrate the pervasiveness of the focus on Central Europe and global war, consider that as of the late 1970s, the United States had woefully inadequate strategic mobility, only very light Marine units, no mountain infantry, minimal ability to provide purified water to expeditionary units in places such as Saudi Arabia or Iran, helicopters that were highly vulnerable to desert dust, and very little capability aside from Marine amphibious units to land equipment “over the shore” where access to high-capacity ports was unavailable.

An Exceptional Period and Hints of a New Paradigm: Creation of the Rapid Deployment Force, 1979–1983

Much changed in the late 1970s and early 1980s, and some of what transpired is a paradigm for what defense planning should be like in the years
ahead. It very much represented planning under uncertainty in the sense we mean it today. Ironically, some of that experience has been forgotten because the Reagan administration dwelled so heavily on the global Soviet threat.

With Vietnam in the past, President Carter's National Security Council raised the issue of "regional contingencies," notably possible threats to Persian Gulf oil. An OSD study overseen by Paul D. Wolfowitz identified a variety of possible Persian Gulf and Middle Eastern contingencies—including, prominently, an Iraqi threat to Kuwait, an Iran-Iraq war, and a Soviet invasion of Iran (OSD, 1979b). The study proposed programs to provide broad capabilities for the region, without focusing on a single threat or scenario. Reflecting the views of the entire study team, I noted prominently in the report that in the case of Southwest Asia no one could tell with confidence who would be the enemy of whom ten years hence. The study's approach, then, was very much in the spirit of what we find necessary in the 1990s. Rather than identifying firm "requirements," it sought to increase "capabilities," without taking too seriously notions about precisely how they would be employed or precisely how much would be needed (threat projections were extremely uncertain, and scenario details dominated the problem).

In any case, hedging programs motivated by the study and subsequent analysis were initiated late in 1979 (Komer, 1984:17), although there was a great deal of controversy about the Iraqi scenario. Few remember this now, but these first programs were oriented more toward generic threats (e.g., Iraq) than toward the threat of a Soviet invasion. The programs included maritime prepositioning for new partially "heavied" Marine brigades, airlift improvements, and base-related efforts (DoD, 1992:D-29; Davis, 1982).

After the Soviets invaded Afghanistan in December 1979, concerns about the region increased greatly. Secretary Harold Brown and Under Secretary Robert Komer quickly initiated a substantial program (Davis, 1982), which was expanded under Secretary Caspar Weinberger and his deputy Frank Carlucci, who succeeded Weinberger as secretary. The program sought to build capabilities for deterring, and perhaps defending, in the Persian Gulf. Part of this involved developing the Rapid Deployment Joint Task Force (RDJTF), later the U.S. Central Command (USCENTCOM). This program was by far the most important effort during the Cold War to build capabilities for contingencies other than full-scale war with the Soviet Union in Europe. It proved its value in Desert Shield and Desert Storm.

The RDJTF/CENTCOM program and related strategy were controversial within the military and in some of the public debate (e.g., Record, 1981). Some strategists believed that any war with the Soviets would become global, in which case the United States would not realistically be able to defend in the Persian Gulf region. Others quarreled about roles-and-missions issues (e.g., whether the Marines should have the lead role). Others resisted efforts
for Southwest Asia because they believed the real prize was Western Europe, where the balance was allegedly so fragile that even the relatively small commitment of forces envisioned for SWA would endanger NATO. The battle within the Pentagon was won by those of us who believed that deterring (or even, perhaps, defeating) a Soviet invasion of the Persian Gulf region was feasible because of the distances and logistical hardships the Soviets would face in attempting to reach the oil-rich regions of southern Iran and the Arabian peninsula, and also because the U.S. deterrent would be credible because of the West’s dependence on the region (OSD, 1979b; Brown, 1981; Davis, 1982; Ross, 1981; and Epstein, 1981), especially if Iranian resistance were significant and coordinated to some degree with U.S. applications of airpower (Levine, 1985). We also believed that failure to lay plans for defense in Iran could be a disastrous policy that might weaken Saudi resolve and encourage Soviet aggression (“negative environment shaping”). Finally (recall Figure 1), we believed that the capabilities sought were desirable for any of many possible contingencies, including eventual Iraqi or other scenarios.

Despite controversy, then, the RDJTF became a reality. Ironically, and despite lip service to diversity, detailed military planning by the Joint Chiefs, the RDJTF, and services soon focused almost exclusively on the Soviet threat to Iran—virtually ignoring others such as the Iraqi threat to Kuwait. Thus, even the RDJTF initiative was not a full triumph of DoD planning for uncertainty: it produced superb material capabilities, but not the operational flexibility for quick and adaptive response. Finally, in 1989, Under Secretary Paul Wolfowitz recommended and the Secretary and Chairman directed changing the focus to regional threats, notably Iraq (DoD, 1992:D-4).

The Anomalous 1980s and the Image of a Global Monolithic Threat

Although programs for the RDJTF/CENTCOM continued and expanded in the Reagan administration, strategic planning moved away from Secretary Brown’s regional orientation (primarily but not exclusively against Soviet threats) to an emphasis on a potential global war with the Soviet Union. There emerged an image of a global and monolithic threat. This came about because, by the late 1970s and early 1980s, the Soviet Union appeared to have developed capability for aggression in several theaters (Central, Northern, and

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13There are parallels when one considers deterring a future Russian invasion of Ukraine or the Baltic states, which do not directly affect vital U.S. interests. See also Davis (1994a).

14Levine (1985:20) documents this and notes some of the reasons, which included an intelligence scare in August 1980 suggesting that the Soviets had raised readiness of their forces north of Iran and were contemplating invasion.
Southern Europe, Southwest Asia, and the Far East) and U.S. planning had to consider the possibility of more-or-less simultaneous wars in Southwest Asia and Western Europe.

In dealing with this, Secretary Weinberger (1981) (influenced by Under Secretary for Policy Fred Iklé and Assistant Secretary “Bing” West) stated that if the Soviet Union went to war in one region, the United States might escalate “horizontally” by conducting offensives in regions of Soviet weakness. Other reports suggested that these actions might include the high seas, Soviet naval bastions, remote areas of the Soviet Union such as the Kamchatka peninsula, and Soviet allies or proxy states such as Cuba or South Yemen. In the new dominant image, then, this would be a war fought for cosmic objectives with few constraints, a war that might even escalate into general nuclear conflict. Superficially, at least, there was little thought given to the myriad of complications that bedevil political and military leaders in more “normal” wars, which may have limited objectives, recalcitrant allies, and painful compromises to bring war to a close. Indeed, many participants believed deterrence was enhanced by emphasizing the all-or-nothing character of war should it occur.15 Some of our European allies were very reluctant to stress conventional defenses, because they believed that mutual fear of nuclear war was the crux of deterrence and security. This was a continuing source of tension, because U.S. defense secretaries championed conventional defense and deemed it feasible and preferable to a single-minded dependence on a dubious extended nuclear deterrence (Kugler, 1993a:160).

Was There Serious Planning Under Uncertainty: Was the Cup Half Full or Half Empty?

Despite shortcomings here and there, it can reasonably be argued that the classic planning methods worked well for the United States from 1961 through 1988 or so. In particular, NATO developed and maintained a fair conventional defense supplemented by the nuclear deterrent. And in the 1980s, the United States developed the capability to fight a global conventional war if necessary. Further, U.S. force structure was large and diverse enough so that the United States was able to respond to lesser contingencies along the way—this despite the fact that defense programs seldom turned out as planned and

15Behind the scenes, many policymakers recognized that wars might be limited and not at all ideal. Secretary Brown and Under Secretary Komer issued planning guidance for contingency planning, which specified best-estimate assumptions on sensitive matters to be used in operations planning. Such guidance was revived under Secretary Cheney. Also, throughout the 1980s, OSD’s Director of Net Assessment, Andrew Marshall, sponsored political-military war games exploring subjects such as multitheater conflict, horizontal escalation, and war termination.
wars seldom turned out to look much like the planning scenarios (Lewis, 1994).

The report card looks poorer when we go beyond total force structure and ask how well the United States was prepared operationally for the range of contingencies that might have occurred. In fact, there were many gaps in specialized capabilities and little in-depth operations planning for complex nonstandard contingencies. Further, presidents and defense secretaries were sometimes very dissatisfied with operations plans' rigidity and failure to deal adequately with political and strategic constraints. Crisis-action teams were well respected, but could deal effectively only with smaller crises.

Ultimately, despite efforts to plan for flexibility, the monolithic-threat-and-ideal-war paradigm dominated military planning for four decades. Many secretaries of defense and strategists attempted to take planning under uncertainty seriously, but it was always an uphill struggle, seldom took center stage, and was easily supplanted by a "business-as-usual" approach with single-scenario focus. As of August 1990, planning revolved around a particular standard Iraqi scenario that posited significant strategic warning time and U.S. deployment well before D-day. Despite the glorious success of Desert Shield and Desert Storm, the United States should be under no illusions: it was unprepared operationally for this most likely of all the "lesser contingencies." In particular, it was unprepared militarily and politically to act quickly in a nonstandard contingency (Davis and Arquilla, 1991). On the other hand, the physical capabilities that had been procured, and the quality of the forces themselves, were excellent. Further, by historical standards, response had been prompt. The cup was both half full and half empty.

With this background on classical defense planning, let us now consider where we are today and where we are or should be going. That is, let us now consider how we move toward a new approach to defense planning—discarding the old ideas that no longer serve us well, retaining but updating others, and introducing new ones.

TOWARD A NEW APPROACH TO DEFENSE PLANNING:
SOME CONVENTIONAL AND UNCONVENTIONAL
PROPOSITIONS

The first observation to make is probably this: that while some analysts have always argued we should do so,17 we are now in an era in which the DoD must plan for a wide range of distinctly nonideal, nonstandard wars, wars that

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16Kennedy's frustrations on this score are well documented (e.g., Reeves, 1993).
are messy in numerous dimensions (Cohen, 1984 and Hosmer, 1987) and involve us with uncertain allies, uncertain and conflicting objectives, and political constraints such as avoiding American casualties (and even, perhaps, excessive opponent casualties). Military leaders will understandably continue to argue that U.S. armed forces should be employed in war only when the nation has first established clear objectives and the determination to accomplish them (see Summers (1984) for sentiments embraced by an entire generation of officers), but the reality will often not be so ideal.

In discussing how the United States is and should be moving toward a new era of planning under uncertainty, it may be useful to deal with unabashedly subjective propositions, propositions about what has been accomplished already and about what constitutes the most important unfinished business. Whether or not the reader agrees with all the propositions, they may still be provocative and help clarify issues. Eight such propositions follow. The first three will displease critics of the DoD and label me as too mainstream, but the rest may alter this impression.

Proposition One

Higher-level U.S. military strategy and policy are now generally sound (for the next decade).

In many respects, the Department of Defense adapted quickly and well to the end of the Cold War. In 1990, indeed just as the crisis in the Gulf began, President Bush and Secretary Cheney preemptively proposed substantial reductions in the DoD budget before Congress could impose them (Nunn, 1990), and did so with a strategic rationale that fully recognized that the world had changed. The Joint Staff under General Colin Powell played a lead role in much of the strategic thinking, and there has been remarkable civil-military cooperation throughout the transition period.

In the first year of the Clinton administration, Secretary Les Aspin conducted a major Bottom-Up Review (BUR) of defense planning (Aspin, 1993). In many respects it corroborated or built from the "Base Force" posture developed under Cheney and Powell, but it called for modest additional cuts and laid out a more substantial and explicit foundation.

The changes in strategy and policy that took place under Secretaries Cheney and Aspin were, then, far-reaching. Key features of change included:18

18See Cheney (1993a,b), Aspin (1993, 1994), Powell (1992), and Bush (1992, 1993). For a more critical assessment, see Kaufmann (1992). Indeed, many observers—and participants in Pentagon planning—believed that Cheney and Powell were unreasonably fixed on the Base Force as being a minimum and stubborn about not fac-
• **Redefining U.S. national security interests and objectives.** In the wake of the Cold War, the United States had to rethink fundamentals. It did so and produced authoritative statements on the subject.19

• **The Russians as just another plausible regional threat.** Starting with Cheney and Powell, the Soviet and Russian threats have been reduced to the same status as other regional threats (my own view is that Aspin went too far on this, barely mentioning Russian threats, even though eventual Russian moves against Ukraine, Eastern Europe, or the Baltic states are very much plausible).

• **The concept of environment shaping.** The United States is now concerned at least as much with environment shaping (e.g., encouraging regional stability or peaceful change, and reducing incentives for other nations to seek superpower status) as with more traditional military missions. Consistent with that, Cheney and Aspin reaffirmed the need for significant U.S. forward presence in critical regions worldwide because of the unique opportunities and responsibilities the nation now has and because it is so strongly in the U.S. interest to avoid the kinds of regional instabilities that might ensue if power vacuums arose—e.g., a military competition among Japan, China, and Korea in the Far East, or various worrisome possibilities in Europe.20 One aspect of environment-shaping strategy is DoD’s appreciation of the fundamental importance to U.S. security of the newly independent nations of Eastern Europe and the former Soviet Union being successful in their democratization and economic growth.

• **Reducing insurance coverage.** There was a clear decision to reduce catastrophic insurance against reemergence of a powerful and aggressive Russia or some other global superpower. Rather than maintain all the existing force structure for such an eventuality, the United States has chosen to depend on having strategic warning measured in years and the ability to reconstitute military capabilities when and if needed. DoD also concluded that we can slow the pace of modernization now that the Russian military is in disarray.

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19 It is interesting that McNamara’s posture statements were not organized around interests and objectives; the requirement to have authoritative statements on such matters came with the Goldwater-Nichols legislation.

20 This has been a continuing theme of RAND work since 1988. See Davis (1989), Winnefeld, Pollack, et al. (1992), Winnefeld (1992), and Levin and Bracken (1994). Similar ideas are reflected in Kugler (1993b). For brief treatments, see Davis (1994d) and Kugler (1994). See also Slocombe (1991) for a short but especially cogent treatment of such issues.
• **Major coverage reductions, but at deliberate speed.** One of Cheney's and Aspin's principal accomplishments will be their defining a *measured* program to cut back the defense budget substantially over the course of a decade, thereby avoiding many of the severe dislocations seen in previous buildups and cutbacks. This was accomplished prudently by first reducing force structure (variable-cost items) while protecting the infrastructure that would have allowed a reversal of course and, subsequent to the dissolution of the Soviet Union, more emphasis on reducing "fixed-cost" structure. Readiness is being maintained (Perry, 1994).

• **Coalitions, not unilateral action.** With some notable lapses (e.g., the absence of much discussion of the subject in the BUR), DoD continues to emphasize the critical role of NATO and other coalitions, rejecting any image of the United States as a unilateral world policeman.

• **Fighting to win.** The United States now plans to *win* any wars it enters, which may require decisive counteroffensive operations while minimizing casualties. This is a drastic departure from the classic emphasis on holding or restoring the border or, in Europe, having a conventional defense adequate merely to supplement the nuclear deterrent.

• **More realism in threat assessment.** DoD is increasingly willing to assume that the adversary in most plausible contingencies will have substantially less capable weapon systems, command-and-control systems, and personnel than the United States.

• **First steps in adaptive operations planning.** At the operations-planning level, DoD is now requiring military commanders to prepare for a broader range of situations and *adaptive planning.* (See Chapter Three of Davis and Finch (1993) for discussion of the Joint Staff's progress on this front.)

• **First steps toward building-block forces.** DoD is now using conceptual building-block forces for major and lesser regional contingencies (MRCs and LRCs), each building block with its own types of capability.\(^{21}\)

• **The shadow of WMD.** Increasingly, DoD has emphasized the problems of proliferation of both weapons of mass destruction (WMD) and ballistic-missile technology.

• **New military missions.** DoD is increasingly sensitive to the need for the United States to participate in or lead peacekeeping or peacemaking mis-

\(^{21}\)The MRC building block involves 4–5 Army divisions, 4–5 Marine Expeditionary Brigades (MEBs), 10 Air Force fighter wings (TFWs), 100 Air Force heavy bombers, 4–5 Navy carrier battle groups (CVBGs), and special operations forces (SOF). The LRC building block involves two Army light divisions, one MEB, 1–2 CVBGs, 1–2 composite TFWs, SOF forces, and various support units, including those for civil affairs. See Aspin (1995:10, 13).
sions. Some effort is even going into peacetime domestic uses of the military (Aspin, 1994).

- **Extensive lift and prepositioning plans.** The United States is planning substantial mobility forces and prepositioning abroad (Kassing, 1994; Aspin, 1994).

If high strategy and policy are reasonable, then what about the general size of the defense program? The answer depends on how much fundamental change can be made in the internals of the program and posture. Let me first assume that the changes will be evolutionary and that the Department of Defense will have to manage diligently and creatively even to buy the posture it is planning. Proposition Two follows in that context.

**Proposition Two**

The BUR force is not unreasonable in cost and is about right in number of major combat formations.

There are several ways to think about how much force structure and defense budget are enough. None are individually persuasive, and some at first blush appear anti-intellectual. The fact is, however, that there is no way to determine rigorously how much is enough. As a result, strategic planners often find it useful to view their problem from many perspectives, including a historical perspective that ignores changes in technology and international politics. When I do this, I conclude that the BUR force structure is about right—for the next ten years—in number of major formations, even though DoD’s appearing to base its rationale on two specific more-or-less simultaneous MRCs is unfortunate and likely to cause trouble when North Korea fades from the scene. The reader may reach different conclusions from the same data.

Let us consider in turn measures of how much we are spending (input), how much we are spending as a percentage of the GDP (the defense burden), numbers of major formations (intermediate output), and the sufficiency of that structure as measured by force comparisons and analysis of warfighting capabilities (output).

**Defense Expenditures Versus Time.** The obvious first measure is budget versus time. In the wake of the Cold War we might reasonably demand that defense cost a great deal less, perhaps about what it did before the buildup for the Korean War. However, since the United States was in terrible shape militarily at that point (Kugler, 1993a:33), it would be reasonable to argue that the budget should be **significantly** higher than in 1950, although much less than the peak during the buildup for the war. *A priori*, I think of FY51 as a reason-
able peg point. Figure 4 shows the history and projected history of defense outlays. We see that the budget projected for FY99 will be about 10 percent higher than in FY51, but lower than at any time since then. Since unit costs of military equipment and personnel have gone up substantially in real terms for decades, I find it remarkable that the projected defense budget will be so close to that of FY51. Apparently, efficiencies and a reduction in capital stock have compensated for higher unit costs.

The Defense Burden. Figure 5 measures the burden of U.S. defense expenditures (i.e., outlays as a fraction of GDP). We note that the U.S. defense burden is already at pre–Cold War levels and dropping. It follows from Figures 4 and 5, coupled with the premise that the United States had too small a defense establishment in FY50, that the defense program is affordable and not obviously too expensive in absolute terms, although there should be opportunities for cost savings as discussed below. Whether a dollar on the margin is better spent on defense or domestic programs is another issue.

But what about needs? Do we need as much capability as we are planning?

![Graph showing national defense outlays versus time in 1993 dollars. The graph includes data for Korea, Vietnam, and Reagan buildup. The FY51 level is marked with a dashed line.](image)

SOURCE: Calculated from data in OMB (1994).

Figure 4—Defense Outlays Versus Time in 1993 Dollars

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22 Others argue that FY50 is a better peg point, because the FY51 budget included significant war expenditures. Still others argue that even FY50’s expenditures are too high a base, because the general threat is going down (Morrison, Tsipis, and Wiesner, 1994).
Figure 5—The Defense Burden Versus Time

Major Formations Versus Time. One crude but useful measure of military capability is the number of major formations—e.g., divisions, carrier battle groups, and air wings. Figure 6, adapted from Lewis (1989), arrays the number of Army divisions versus time. We see that even the Base Force of 12 division equivalents would be smaller than any Army force since World War II. On a historical basis, then, the even smaller BUR force of 10 active divisions does not seem excessive. Similar arguments can be made for the Air Force, Navy, and Marines.

Another way to assess the number of major formations is by arraying them in terms of mission. Figure 7 does this for Army forces using a format adapted from Rostker, Don, and Watman (1994), which allows us to see how both active- and reserve-component forces fit into the overall set of missions. Figure 7 represents one possible interpretation of how the BUR force will be implemented (details have not yet been released by DoD). Although reasonable people can and do disagree (Kaufmann, 1992), the structure does not seem excessive to me. Considering the importance ascribed to environment shaping and forward presence, our forces in Europe and Korea will be marginal. Any-
Figure 6—Historical Level of the Active Army in Division Equivalents
(Brigades divided by 3)

Figure 7—Depiction of Possible Army Force Structure Versus Mission
thing smaller might reduce U.S. clout significantly (e.g., if the United States could no longer claim to have the basis for a "capable corps" in Europe, that might affect the role and influence of the U.S. commander there). It could surely undercut environment shaping for Eastern Europe and the former Soviet Union by indicating a U.S. strategic withdrawal.

The BUR building block for MRCs, shown in Figure 7 in the crisis-response column, includes 4–5 Army divisions, which is significantly less than what was committed in Korea, Vietnam, and the Gulf War (Kugler, 1994; Lewis, 1994). The early-reinforcement forces appear reasonable to deter or fight in a second contingency or, significantly, to reinforce a single major contingency in which airpower did not prove quite as magically powerful as it did in Desert Storm. The strategic reserves (almost entirely National Guard forces) are smaller than those of many other countries, and some such forces are needed for domestic missions as well as for reinforcements in a long war. The training units are essential if the United States is to have the capability to train reserves efficiently (Rostker, Don, and Watanabe, 1994).

**Force Comparisons.** While "bean counting methods" are appropriately in low repute because technological factors, fighting effectiveness of the personnel, and logistics can all have such large effects (Levin, 1988), it is nonetheless relevant to ask whether the planned U.S. force levels will be large or small compared with those of other significant countries, both allies and potential adversaries. As a rough cut at this, Figure 8 shows total active military personnel and active ground-force personnel for each of a number of nations in 1992, along with the planned levels of the BUR building block for MRCs. We see that the building block is comparable to or smaller than the likely force levels of China, Iraq, Iran, North Korea, Russia, Syria, and Vietnam. Comparisons of active ground-force personnel make the BUR seem even smaller, since the United States has an unusually large Navy and Air Force. The size of the Chinese and Russian armies should give us pause, especially when we contemplate the environment-shaping objective mentioned earlier. Including reserve forces would make U.S. capabilities appear smaller.23

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23 Another way to look at sufficiency is to ask whether the United States could tilt the balance decisively when foreign states such as North and South Korea are in competition or conflict. Such a discussion is beyond the scope of this paper, because answers depend on specialized capabilities, asymmetries of capability, and scenario details.

24 To be sure, U.S. forces would be qualitatively superior in most or all instances, which would mitigate the numbers problem. However, minimizing casualties often requires highly favorable force ratios, and many types of conflict require large numbers of personnel, not mere firepower and technological virtuosity.
Figure 8—Force Comparisons (Active-duty personnel)

Can Allies Compensate? DoD’s skeptics, when shown such comparisons, invariably complain about the need to consider allies. However, while allies can greatly reduce ground-force requirements in some contingencies, they cannot in others: e.g., the allies may be late in a fast-moving crisis, ineffective, or already severely weakened from war. The United States should vigorously seek allies, but cannot always count on them.

Fighting two more-or-less simultaneous MRCs. The bean-count comparison dealt with personnel levels. But what about warfighting? According to the BUR report, 10 active divisions and 6 reserve-component divisions are adequate for the two standard MRCs. That is consistent with prior RAND analysis (Bowie, Frostic, et al., 1993). Indeed, one can imagine air-force-favorable versions of the two MRCs in which the United States could devastate the adversaries with an even smaller force.25 The question, however, is why we should expect the adversaries to fight again in a manner of our convenience

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25As pointed out by Taibl and Kostiak (1993) and Conetta and Knight (1993), neither administration analysis nor the RAND analysis described in The New Calculus (Bowie, Frostic, et al., 1993) “proves” the need for the force levels used in a replay of Desert Storm. Nor, however, do they claim to do so.
(Bennett, Gardiner, and Fox, 1994). When one looks seriously at this issue, it is not clear how many divisions might be needed even to fight one MRC successfully, but it could well be a good deal more than a BUR building block. While I am troubled by the excessive emphasis given to the Iraqi and Korean scenarios currently (no one should believe that the two-MRC objective would go away if merely North Korea ceased to be a threat), a two-MRC objective seems sensible. My own view is that

- The force structure should be adequate to decisively defeat an opponent in one MRC and either to deter a second (mostly with airpower) or to limit the second aggressor's gains and then reverse the aggressor later (Davis, 1994d). Anything less strikes me as inappropriate, since aggressors would have a free ride if we were tied down with our single MRC.

Overall, then, I conclude that the BUR force is clearly not excessive and may even be too small if we insist on a win-win posture rather than one sized for win-deter/win-hold-win.

If, then, high strategy, policy, the size of the defense program, and the number of major formations appear to be reasonable, what more needs to be done? In fact a great deal, for at least three reasons. First, it is at least possible that a re-engineering of the Defense Department, much like American industry has been undergoing, would allow further cuts in the defense budget, which would be welcome given our many domestic needs. Second, because of current underfunding, it will be a major struggle merely to buy the BUR force posture, a struggle requiring a great deal of efficiency and tough choices that have not yet been identified. The third reason is that DoD has only begun to think about how to prepare for next-century challenges, including from nations that may develop capabilities tailored to counter our own and to exploit our weaknesses (Bracken, 1993). The next proposition fits with all of these.

Proposition Three

We should rethink the size, composition, and operations of major formations, increasing efficiency and introducing next-century doctrines.

As a preface here, it is useful to recognize that a great deal of thinking about "requirements" stems from use of "markers." For example, an Army officer contemplating operations may view a map, identify lines of communication and key cities, and see the need for "a division here, here, here, and there, with at least a division or two in reserve" (a judgment sometimes dictated as much by geography as by the size of the enemy force). These judgments reflect the doctrinal capabilities of the markers (divisions, in this case), which depend on number of maneuver units, support units, and command-staff capabilities.
Only seldom is that reasoning sensitive to the precise size of the division or its constituent units. If the various functions could be accomplished with fewer people or in different ways, so be it, but the task requires the functions associated currently with a division. But this raises questions such as:

- Could the division be smaller? For example, do we still need as many tanks per platoon given the increased range and lethality of our tanks and modern battlefield surveillance?
- Could independent combined-arms brigades fulfill some of the tasks now performed by divisions?
- Would modern information technology and maneuver of long-range fires allow a new command structure with fewer layers?

Navy and Air Force officers have similar questions to ask regarding the nature of their markers (primarily carrier battle groups and tactical fighter wings) and commands. Does a carrier battle group in the late 1990s have to be the same as one of the 1980s? Also, when could helicopter carriers or cruisers be substituted for aircraft carriers? How large should Air Force squadrons and wings be, and how much can be done with composite wings (already a consideration) and other changes?

There are also important questions about the reserve-component formations and their relationships to active forces. For example:

- Why must the ratio of active and reserve-component Army divisions be so high?
- Why have Israel and Germany, but not the United States, been able to depend on high-readiness reserve-component combat divisions?
- If the root problem is that the regular Army has no faith in the fighting capability of the National Guard, then is drastic reorganization needed despite the political problems involved? (With more effective reserves we could reduce the number of active divisions further.) Or should we de-emphasize entirely the combat role of the National Guard?
- If we maintain the number of active units now planned, then on what basis do we decide requirements for reserve-component readiness? What is the rationale for requiring deployability of 15 National Guard brigades in 90 days? (RAND work suggests that such a goal is highly unrealistic without additional unprogrammed training units and increased strategic lift.)

In any case, defense planning should shift from concerns about force structure in the large to concerns about configuration, diversity, and wholly new operational concepts exploiting technology and, where achievable, information dominance. We should be rethinking the nature, composition, and functions of major formations from scratch, looking to the 21st century
rather than the past for an image of what is needed.\textsuperscript{26} The services all have thinkers and innovators working on these matters, but pressures from the Secretary of Defense will be needed if they are to be valued and heeded. Change does not come easily, but is needed as the next proposition asserts.

**Proposition Four**

The U.S. force structure is poorly configured for wars other than replays of Desert Storm.

If the United States reviews its major formations, it may soon conclude, as did an Army-sponsored study by colleagues James Quinlivan and Fred Frostic, that current U.S. forces are poorly configured for many possible future contingencies (Frostic and Bowie, 1994). For example, it can be argued that the Army has a shortage of mobile light divisions (or, within heavy divisions, of infantry battalions) appropriate for operations in urban, jungle, or mountain environments. There are also shortages of specialized early-available support units such as military police and language experts (Taw and Hoffman, 1994; Winnefeld and Shlapak, 1990). Given the increased importance of peacemaking/peacekeeping operations and the likelihood of other contingencies to which airborne and air assault forces would be best suited (e.g., for forced-entry operations in difficult versions of the standard MRCs, as discussed in Davis, 1994b), it seems that the priority being given to heavy units—the very forces for which Air Forces can most nearly substitute on the margin—may be overdone. Traditional straight-leg infantry has only a very limited role, but more lethal and mobile infantry, in combined-arms groupings, appears to be quite valuable.

It may be, of course, that the solution here is to have the Marines be the specialists in modern light infantry operations (along with the 82nd Airborne and 101st Air-Mobile Air-Assault divisions), reducing further their emphasis on amphibious operations, but playing up vertical envelopment. This would require more support structure and mobility.

Another example of what this proposition involves relates to weapons of mass destruction, especially chemical and biological weapons, which must be

\textsuperscript{26}This will mean worrying about Third World countries having more sophisticated weapons, including WMD and ballistic missiles, and about how would-be superpowers might be configuring their forces in the next century and how we could continue to trump their efforts through, e.g., exploiting our advantages in the collection and effective use of information. For a provocative article on thinking beyond the next five to ten years, see Bracken (1993). See also Bennett, Gardiner, and Fox (1994).
viewed as a very serious and plausible threat. U.S. operations in Desert Shield and Desert Storm involved high concentrations of combat forces, support forces, and ammunition. Are such concentrations acceptable for the future? If not, what implications does this have for the size and character of our major formations, and the doctrine they follow? Similar questions arise if merely we impute to next-century adversaries modern cluster munitions and delivery mechanisms.

Let me now turn to issues of program and budget.

Proposition Five

The "natural" processes of budget making over the next few years will leave the United States with much less capability than currently expected unless drastic reforms occur.

Another reason for re-engineering comes from cost concerns. Colleague Kevin Lewis (Lewis, 1994) makes a persuasive case that the process of cutting back force structure is far more complex and insidious than is generally appreciated (see also Zalkheim and Ranney, 1993).

- The currently projected force structure is significantly underfunded (by perhaps $50 billion or so over six years).
- The effects of that and any additional cuts will be worse than proportional to the dollar amounts: capability versus dollars spent is a distinctly nonlinear function because of R&D, infrastructure, and overhead costs.
- The services will tend to hold on to remaining structure, but doing so may severely hurt modernization and readiness (although DoD is attempting to avoid this, as discussed in Perry, 1994). They may also fail to make adequately drastic cutbacks in support by redesigning systems; instead, they may scale down an inappropriate structure or shift more capability into the reserves, including capabilities that might be badly needed early in crisis.
- At any budget level, expenditures will inevitably be distinctly nonoptimal because of managerial mistakes and constraints imposed by Congress causing the overhead fraction to increase. The force purchased with a given expenditure may be the force analysts would have expected from an expenditure 20 percent less. This is my statement of what Lewis calls "the discipline gap."^27

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^27In 1992, RAND held an internal defense-planning workshop at which we discussed what cuts could be made to the then-sacrosanct Base Force. Our analysis of MRCs suggested that the United States could reasonably reduce to a force structure that translated into a 1997 budget of about $200 billion (in 1993 dollars). However, after a sobering discussion of the historical record in implementing programs, we concluded...
Figure 9 summarizes some of the problems with an influence diagram in which a positive arrow linking two items means that an increase in the first item tends to increase the second; a negative arrow means that an increase in the first tends to decrease the second or that a decrease in the first tends to increase the second. One message of the figure is that the various influences reinforce each other. For example, as domestic needs increase (top of figure), the defense budget decreases, but this puts more items at risk (e.g., bases) (not shown), which causes the Congress to impose more constraints than in an easy-money environment, which increases the discipline-gap problems, which results in a higher overhead factor. That reduces actual capability (e.g., requiring even more cutbacks in the number of bombers procured and an increase in their unit cost, which is seen as an overrun) and—in the low-threat environment—DoD is criticized for its mismanagement and the defense budget comes under more pressure rather than less.

Against this background of needs and humility about the ability of defense planning to achieve its objectives, what approach should be taken in making the difficult choices that underlie the defense program?

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Figure 9—Influences Adversely Affecting U.S. Military Capabilities

that the force structure we were treating as marginally acceptable would cost more like $230 billion because of the discipline gap and subtle modernization-related underfunding in the Base Force budget. We may have been optimistic.
Proposition Six

DoD should identify a broad range of important operational objectives and then emphasize “capabilities-based planning.”

Despite the manifold uncertainties about the precise contingencies that will emerge, the United States should clearly plan capabilities permitting it to fight effectively in Southwest Asia, Korea, and Eastern Europe. To deal with uncertainty, however, DoD should—for each region—identify the substantially different generic military campaigns that might be necessary and, for each campaign, identify associated operational objectives and tasks. It should then go about building the best mix of capabilities for the range of objectives and tasks. Because of the varied nature of the possible campaigns, and because there are other important claimants for the marginal federal dollar, the focus should be on what is sometimes called “capabilities planning,” as distinct from “requirements planning.” In capabilities planning, one seeks to identify the mix of force elements and systems that maximizes capability for different levels of the budget, and to keep track of how rapidly needed capability is rising with additional expenditures. Since significant reforms with big payoffs often require a buy-in expense, this analysis should be based on “chunky marginal analysis.” That is, the question is not how best to spend the marginal dollar, but the marginal billion or ten billion dollars.

Another key feature of capabilities analysis is that it strongly encourages measuring the value of additional expenditures with multiple measures of effectiveness (e.g., measures recognizing substantially different contingencies or contingency details, problems of sustainibility and all-weather suppression of air defenses, and the potential need for vertical envelopment and armored offensives). By contrast, “requirements analysis” is structured around finding the least-cost way to accomplish a particular set of requirements (e.g., executing a particular time-phased deployment list with particular required delivery times) and may yield a force mix that is ill suited to other cases. Further, the language of requirements analysis is inappropriate except when the “requirements” are truly required.28 When planning against uncertain potential threats of uncertain capability in uncertain contingencies, it is wise to keep track of how much one is paying to decrease risk.

Figure 10 illustrates the point for a notional relationship between the number of ground-force divisions and expenditures. At low expenditure levels we are buying into the problem with R&D and the development of production

28A good analyst can in theory reach the same conclusions with either a requirements-based or a capabilities-based approach. In practice, however, the former is often inferior because people take “requirements” too seriously.
Figure 10—Capabilities, "Requirements," and Budgets

capabilities. A budget level at point A would be economically inefficient. If we had a narrow concept of national interests and saw little direct threat to those interests, the threat we might see would be very low (e.g., corresponding to a budget at point B). However, if we had a more expansive concept of national interest—as have a long series of administrations—then the issue would be to assess the likely threats to be met by our postulated ground-force capabilities. In the current world, there are enormous uncertainties about who and how capable that threat might be, as illustrated by points C, D, and E. If the consequences of being wrong were catastrophic, then we would have to consider point E a "requirement" and pay the price. If the consequences would merely be serious but not catastrophic, we might decide to stop at points B or C, depending on what other claims existed for the marginal budget dollar. That is, we would be chary of buying excessive insurance.

An alternative way of viewing the problem is to fold together notions of how large and capable the threats might be, the likelihood of different threat magnitudes, and the risks of being wrong. The result is a kind of utility function for additional expenditures as indicated in Figure 11 (see the solid curve with its postulated band of uncertainty, reflecting doubts about the various likelihoods and consequences). In this case, Figure 11 shows notionally the perceived overall value of the defense program as a function of its size, indicating the size of the program at its peak, at the Base Force level, and at the BUR force level. Figure 11 suggests that the plot of perceived value versus expenditures is highly nonlinear. At the high end, it incorporates what economists re-
fer to as diminishing returns. In the realm of interest, and in looking at reductions rather than increases in budget, it reflects the notion that when the defense program is reduced, fixed-cost elements of the system are a larger share of the total, forcing greater-than-proportional cuts in combat capability. Figure 11 also reflects schematically the implicit conclusion of the Bush and Clinton administrations that further cuts in the defense budget would result in rapid and important declines in capabilities. The crux of the debate with those who advocate much larger cuts is indicated—in a somewhat exaggerated way—by the "alternative" assumption curve, which could reflect the belief that current capabilities are more than we really need (for a mix of reasons involving judgments about national interests and objectives, and about the likelihood and severity of various possible contingencies) and the belief that further reductions in budget would lead to more-or-less proportional cuts in fighting capability (i.e., cutting the budget by 20 percent would reduce divisions, wings, and carrier battle groups by about 20 percent).

There is no basis currently for any claims of rigor about what curves are "right," but my own judgment, affected strongly by concerns about current underfunding and the discipline gap, is that the BUR program is at the edge of prudence—i.e., that further cuts would have serious negative consequences.

![Figure 11—Value of Defense Capability Versus Size of Defense Budget](image-url)
It is possible, of course, that we could find dramatically effective new ways to exploit technology and reorganize combat forces, support forces, and infrastructure; that we could eliminate all but "essential" infrastructure; and so on. If so, the curve of value versus expenditure would drop off more gently with further cuts. But, the current program is already known to be underfunded, and we will have to work very hard merely to make the BUR force a reality.

To summarize, taking the heavy curve in Figure 11 as our basis of reality, we surely don't want to spend so little as to be on the buy-in portion of the curve; nor do we want to be spending to buy the very expensive insurance at the top end, where the curve is flattening; instead, we want to be working at or a bit above the knee—i.e., at the outset of the realm of "diminishing returns." This is an old concept among economists and systems analysts, but it was seldom applied when threat "requirements" were taken literally.

Against this background, I offer the following proposition about the basics of the defense planning system.

**Proposition Seven**

**The PPBS system—and its conceptual underpinning—need to be substantially reworked and revitalized.**

The conceptual and managerial system for building the defense program has changed little for decades. We have not yet seen a major study on "reform of the PPBS," even though the mind-set of the current PPBS does a poor job of reflecting some of the new strategic and policy concepts. In this regard, consider the following:

- Nearly all quantitative discussion of the Bottom-Up Review and its implications has focused on traditional *requirements-based planning*—and for two highly specific major regional contingencies at that. Analysis has had little to say about how one accomplishes the missions of environment shaping, deterring "difficult" aggressors (e.g., a future Russia threatening Ukraine or the Baltic states), or peacemaking and peacekeeping. 29 Nor has there been much discussion of nonstandard scenarios.

- Although DoD now uses multiple scenarios, it has only one scenario per theater, despite the fact that a real scenario in a given theater could take a variety of forms. As an example here, consider that decisions on the active-reserve mix (and the nature and readiness of our reserve force) were driven by specific standard-scenario assumptions, even though the Korean problem

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is likely to disappear before long and conclusions about what makes sense in the mix are sensitively dependent on details of scenario (Rostker, Don, and Warman, 1994).

- There has been relatively little work in recent times to define optimal mixes of forces—i.e., studies making difficult tradeoffs.

- The current PPBS has become comfortable with existing organizational structures and has not effectively stimulated consideration of radically force configurations. There has been little re-engineering as yet.

- There is little in the PPBS system itself to underwrite, much less enforce, the concept of planning for adaptiveness or the desired attributes of robustness and flexibility (Davis, 1994b). Nor is there much to encourage an explicit objectives-to-tasks approach (Kent and Simons, 1994).

- There is little in the institutional mind-set of the PPBS to value nontraditional uses of the military ranging from peacemaking/peacekeeping abroad to nation building and various types of activity in the United States itself. Given the desire to maintain a larger active military than is likely to be needed for warfare, would we not be giving higher weight to such nontraditional missions, despite the traditional reluctance of the U.S. military on such matters? (See also Davis, 1994d.)

- The PPBS has no agreed basis for how to analyze how-much-is-enough questions with respect to support structure and infrastructure—even though, increasingly, that is where the money is (Eden, Dumond, Folkeson, Halliday, and Moore, 1994). 30

- The PPBS is so institutionalized and complex that it significantly increases defense programming costs by rewarding certain management skills (like inside deal-making) and not rewarding other initiatives that hold much promise for efficiency, like outsourcing and partnering alliances with the private sector in R&D.

So far, I have dealt with issues of defense posture and the process of developing that structure. In thinking about re-engineering, however, we should also consider operational capabilities for rapid and flexible action. Based on the close call in the Gulf War (what if Saddam had continued to roll into Saudi Arabia?) and the likelihood that future opponents will have learned from the experience (Davis, 1994b; Bennett, Gardiner, and Fox, 1994), a new attitude about speediness is needed.

30 This is not entirely fair, since DoD is attempting to reform acquisition and defense management (Cheney, 1993:30; Aspin 1994; Perry, 1994).
Proposition Eight

Operations planning should be reformed to assure capability for extremely rapid force employment and adaptation.

The Joint Staff has made great progress in improving the extent to which the United States can adapt to circumstances in contingencies. The days in which planners took the monolithic operations plan literally are now past us. However, as described at length elsewhere, there is much more to be accomplished, and there is reason to doubt that it will be accomplished without strong leadership from the Secretary of Defense and a more general institutionalization, through exercises and doctrine, of assuring the capability for rapid adaptive planning and execution in crisis (Davis and Finch, 1993; Davis, 1994b).

Taken together, the last five propositions suggest rather dramatic reforms.

TOWARD A NEW GRAND CONCEPT OF DEFENSE PLANNING

If one accepts most of the propositions, what is the new grand concept toward which we should be heading? With some trepidation, since this essay is a starting point for analysis rather than the conclusions of a careful study, I believe major elements of that grand scheme should be as follows:

1. **Establish important, credible, high-minded, and affordable objectives.** These should be to help preserve international peace through environment shaping; to deter strategically significant aggression (which includes aggression indirectly affecting our interests); if deterrence fails, to decisively defeat the enemy with tolerable casualties or, in other cases, to punish the aggressor to deter future aggression; and to posture ourselves flexibly so that, in the next century, we can adapt either to a more peaceful world or the emergence of major new threats (Kugler, 1994).

2. **Plan for adaptiveness.** Establish overall force structure and the size of the defense program in terms of how to pursue these objectives effectively and efficiently, using chunky marginal-cost methods and multiscenario, multidimensional capabilities analysis rather than the traditional "requirements" analysis, and emphasizing planning for adaptiveness (Davis, 1994b) rather than planning around specific scenarios.

3. **Be conservative in single-MRC analysis.** Be relatively conservative in assessing how much is enough for conventional forces in a single MRC, be-
cause: (a) the United States would want to minimize casualties in any conflict and (b) deterrence will depend on conventional capabilities. In particular, size air and ground forces for successful conventional-defense campaigns under worse-than-expected conditions.

4. Expand concepts of deterrence. Recognizing that we cannot deter certain types of faraway aggression by defending weak states that are not directly vital to our interests, plan specifically to deter aggression by being capable and willing to severely punish aggressors through air strikes, naval blockades, and general economic measures. Where appropriate, assist the defended nations in building nonoffensive defenses (NOD) that would greatly raise the price of invasion. Think through U.S. and allied ability to use punishment methods against nations with weapons of mass destruction.

5. Exploit the airpower card. Assure that the United States can apply airpower early in crisis and can readily establish air supremacy in all theaters of interest. The U.S. advantage in airpower is extremely important and should be fully exploited. As a minimum, U.S. airpower greatly constrains the potential strategies of our adversaries.

6. Prepare for nonstandard contingencies. Build capabilities to cope with nonstandard scenarios that would require early U.S. forced-entry operations and other specialized and demanding operations.

7. Re-engineer formations and doctrines. Because of the changing nature of likely adversaries and wars, change the structure of major formations with an eye toward reducing personnel and assuring capabilities suitable for diverse scenarios in next-century contexts. Consider especially scenarios in which airpower and armored forces have reduced effectiveness.

8. Plan on sustained peacekeeping and peacemaking operations. Reconfigure the posture, including the active-reserve mix, to permit sustained peacekeeping and peacemaking operations in an international context, without endangering U.S. capability to fight and decisively win a quick-breaking major regional contingency.

9. Be ready to cope with weapons of mass destruction. Assume weapons of mass destruction will be a major factor in future regional contingencies, and that the United States must be prepared to deter use, defend against, operate forces in the presence of, and respond to use of such weapons in ways effective from the perspective of our allies as well as ourselves. That is, even standard MRC scenarios should be scenarios with a strong WMD shadow, and potential WMD use (Millor, Molander, and Wilson, 1993). Particularly worrisome here are chemical and biological weapons.

10. Overhaul the operations-planning process to emphasize planning for adaptiveness. Seek an adaptive planning system that could, within hours or a few days, generate appropriate and executable operations plans for rapid deployment and employment of forces in real-world crises with numer-
ous elements of surprise or complication. Assure the quality of the system with frequent no-notice testing in stressful challenge scenarios developed by the Office of the Secretary, and by in-depth follow-up (Davis, 1994b).

11. *Review and either improve or reduce the strategic reserve.* Maintain and improve capabilities for a strategic reserve (reforming the Army National Guard if necessary) suitable for a wide range of contingencies worldwide. Provide strategic mobility forces so that the reserve can be used effectively, but be wary of "requirements" based on the timelines of particular scenarios. Reconsider the whole range of flexible-readiness options for reserve-component forces (e.g., Nunn, 1990). If high-quality combat reserve capabilities emerge, reconsider the number of active-component ground-force divisions.

**SUMMARY USING THE INSURANCE METAPHOR**

If defining the defense program is indeed something like buying insurance, then how far can the metaphor be pushed? Rational purchase of insurance involves worrying about both coverage against *catastrophic events* and *comprehensive coverage* against a broad array of lesser possibilities. In the new era of defense, we can afford to set lower limits on our catastrophic insurance (and demand lower premiums), because the likelihood of anything catastrophic is small and the worst plausible war would be much less catastrophic than it used to be. At the same time, we need to pay close attention to whether we are buying *comprehensive insurance*, because some of the protections we had previously as a spin-off from our catastrophic insurance (i.e., the ability to cope with a diversity of unplanned contingencies) may disappear as we reduce our premiums. And, finally, we need to use creative approaches to organization and to the exploitation of technology to see whether we can reduce the price of maintaining high-quality comprehensive insurance. But such "better management" will require a level of innovation and reform in the Department of Defense that has not been witnessed in several decades. It can be an exciting time for defense planning.

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Chapter 3

OBJECTIVE-BASED PLANNING

Glenn A. Kent and William E. Simons

There is a continuing need in the planning and development of military capabilities for a clearer sense of direction and linkage to national interests. This need has been reflected in public law, through the Goldwater-Nichols Act of 1986, which mandates that the national interests and objectives of the United States be made explicit in annual executive branch reports to the Congress. This paper elaborates on a concept for such planning. The concept centers on a subordination of objectives whereby outlining a plan for attaining stated goals at one level of organization defines objectives to be achieved at subordinate levels of implementation. It describes a process by which one may proceed coherently from stated national security objectives, to national military objectives, to regional campaign objectives, to operational objectives, and finally to military tasks. The process provides a clear audit trail from top to bottom, gives clear meaning to plans of action (strategies) formulated at each level, and offers a certain stability for our national security planning, year by year and era by era. The concept sets the stage for a process of allocating national defense resources to best effect and could be applied to the DoD's Planning, Programming and Budgeting System (PPBS).

INTRODUCTION

The first step in defense planning is to define a clear sense of direction that can be followed consistently and thus set the stage for providing the most relevant military capabilities within the constraints imposed. The challenge is to link the processes of developing and acquiring military equipment, and of organizing, training and equipping forces, more closely to recognized national security objectives.

Fundamental to any improvement is a disciplined way of thinking. This discipline is needed in two respects: a reliable management framework and a consistent lexicon for describing important elements of the framework. The management framework must include a number of key functions:

- Articulating projected campaign and operational objectives.
- Identifying critical deficiencies.
Formulating new concepts to alleviate deficiencies and to achieve projected objectives to the maximum extent possible.

Deciding which concepts to implement.

Initiating and completing programs to implement the agreed-upon concepts.

To be effective, the framework must encourage consideration of alternative campaign plans, alternative concepts to alleviate deficiencies, and alternative programs to implement a given concept. Indeed, a strength of the approach is in avoiding using the term "requirement" to give inappropriate blessing to what is in fact only one proposed mechanism for accomplishing an objective.

This paper addresses the need for and the fundamental process underlying an objective-based approach to defense planning. Much of it is excerpted from a larger RAND report (Kent and Simons, 1991), which includes also a detailed development of the management framework referred to above. The present paper deals mainly with the initial element of that framework, namely how and why a hierarchy of objectives—security objectives, campaign objectives, and operational objectives—should be articulated. It begins by reviewing the statutory basis for objective-based planning and clarifying the frequently cited "need for a clearer national strategy." It follows by recommending a process to move from a statement of those hierarchical objectives to corrective action.

GOLDWATER-NICHOLS LEGISLATION

In October 1986, the Congress acted to give the force of public law to several procedures it believed important for improved defense planning. Some of these had been recommended by the earlier Packard Commission (the "Blue Ribbon Commission on Defense Management," commissioned in July 1985). With respect to the linkage of defense planning to strategic objectives, the Department of Defense Reorganization Act (Goldwater-Nichols) requires the President to submit an annual report on the national security strategy of the United States to the Congress. The law stipulates that this report include a discussion of at least the following:

- Worldwide interests and objectives of the nation that are vital to national security.
- Foreign policy, worldwide commitments, and national defense capabilities necessary to deter aggression and implement national strategy.
- Proposed short-term and long-term uses of the political, economic, military, and other elements of national power to achieve U.S. objectives.
- Adequacy of U.S. capabilities to carry out national strategy and the balance among all elements of national power in this regard.
Further, Goldwater-Nichols mandates that the annual report to Congress by the Secretary of Defense will henceforth reflect—in certain stipulated areas—the content of the President's national security strategy report. The stipulated points include a justification for the major U.S. military missions during the following fiscal year, together with an explanation of the relationship of the military force structure to those missions.\textsuperscript{1}

The intent of Goldwater-Nichols with regard to defense planning is also indicated in its requirement of a one-time series (in 1987) of DoD management reports. Among other requirements, these reports were intended to provide Secretary of Defense, Chairman of the Joint Chiefs of Staff, service secretary, and independent contractor views on whether:

- DoD organization ensures that strategic planning and contingency planning are linked to, and derived from, national security strategy, policies, and objectives.
- DoD’s Planning, Programming, and Budgeting System (PPBS) ensures that strategic planning is consistent with national security strategy, policies, and objectives.\textsuperscript{2}

President Bush continued the review process, and a number of changes in process were introduced (Cheney, 1989). Nonetheless, much remains to be accomplished if the coherence called for by the Goldwater-Nichols act is to be achieved.

\section*{STRATEGY OR OBJECTIVES?}

Most laments about the alleged lack of rationality in the current defense-planning process center around the observation that the United States lacks an explicit post–Cold War strategy at the national security and national military planning levels.

A strategy is a plan for using available resources to achieve specified objectives.\textsuperscript{3} In a sense, such plans do exist at the levels mentioned. They exist in the form of budgets. However, these spending plans usually lack a coherent audit trail showing how allocating resources in this manner achieves recognized national security objectives. Or, if an audit trail is evident, the allocation may not be what the critic would prefer. So part of the defense-planning problem

\begin{itemize}
  \item \textsuperscript{1}Public Law 99-433, \textit{Department of Defense Reorganization Act of 1986}, October 1, 1986, Sec. 603.
  \item \textsuperscript{2}Public Law 99-433, Sec. 109.
  \item \textsuperscript{3}This is a paraphrase of the definition given in the \textit{Joint Dictionary of Military Terminology}, JFM 1-2.
\end{itemize}
centers on the perception that public budget statements do not reflect an underlying rationale for the allocation of resources reflected in the documents.

Objective-based planning reflects the fundamental relationship between strategy and objectives: *Outlining a plan (strategy) to attain stated goals at one level of organization simultaneously defines objectives to be achieved at the next-lower level of implementation.* Thus, plans for one of the executive departments, e.g., the Department of Defense, identify objectives appropriate for each major division and functional agency. An important advantage afforded by attention to this pattern of subordinate objectives, rather than by a series of elaborate strategy papers, is its utility in supplying a clear audit trail from the highest level of policy articulation down through successive levels of administration.

HIERARCHY OF OBJECTIVES RELATING TO DEFENSE PLANNING

The hierarchy of defense-planning objectives—from national security objectives, derived from the mandate to protect our fundamental goals, down to specific military tasks—is depicted in Figure 1.4 Plans of action are defined at each level in response to perceptions of the threat and the strategic environment. Strategists at the national security level identify national security objectives. Planners at the national military level identify national military objectives and regional campaign objectives. Regional commanders and regional planners define operational objectives in campaign plans and identify specific military tasks to be accomplished in a concept of employment. Feedback (see slender arrows in Figure 1) enables plans to be modified in reaction to changing operational and fiscal constraints and the changing threat.

Against this background, we now provide specific illustrative examples for the elements of the hierarchy. They do not, however, represent an exhaustive or definitive catalogue of U.S. national security objectives.

Fundamental Goals to Maintain

Fundamental goals are defined by the Constitution of the United States. They include physical safety for our citizens, independence for the nation, and

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4In Figure 1, the dark, heavier arrows depict formal directives from higher authority; the shaded arrows depict less direct, but significant, influences; the slender arrows depict feedback from subordinate organizations. To be sure, there are sometimes conflicts among objectives and instances in which objectives are inherently ambiguous to some degree. There are also a variety of constraints affecting the processes to which Figure 1 applies. Despite these complications, a great deal can be accomplished in this framework.
a democratic way of life. They are enduring and unchanging. There is no feedback loop. These fundamental goals are to be maintained regardless of the threat and at all costs.

National Security Objectives to Attain

National security objectives are derived in response to threats to our fundamental goals. They are established at the level of the National Security Council (NSC). For example, the presence of many Soviet divisions on the inter-German border after World War II, coupled with the actions and statements of Soviet leaders, caused strategists at the national security level to define (among others) the following national security objectives:

- Prevent the Soviet Union from dominating Western Europe.
- Deter the Soviets from launching a large military campaign to overwhelm Western Europe.
- Prevent such a campaign from being successful if launched.
In the new era, our urgent attention is focused on other regions—especially Southwest Asia and Northeast Asia. The policies of rogue leaders in these areas threaten our vital interests.

Strategists at the national security level have defined our national security objectives, a few of which we mention here, as follows:

**With regard to Southwest Asia:**

- Defend the sovereignty, independence, and territorial integrity of our partners in the region. Assure access to oil from the region.
- Deter recourse to war, terrorism, and subversion, and enforce UN Security Council resolutions.
- Successfully counter military aggression, if it occurs.

**With regard to Northeast Asia:**

- Preclude any single power or consortium of states from attempting to dominate the region.
- Deter aggression by North Korea or defeat it should deterrence fail.
- Preserve the U.S.-Japanese security linkage.

**National Military Objectives and Campaign Objectives to Attain**

Whereas national security objectives embrace all instruments of national power, i.e., political, economic, and military, national military objectives state those objectives to be achieved—at least in part—through the use of military resources. The national security objectives defined above prompt planners (strategists) at the level of the Secretary of Defense and the Chairman of the Joint Chiefs of Staff (the principal military adviser) to adjust and refine subordinate objectives.

To illustrate, we continue the example of national security objectives for Northeast Asia. These objectives include assuring the security of South Korea and improving the current situation between North and South Korea. Implied by this is the need for a robust defense of South Korea in the event of invasion.

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5 See Bush (1993) and Cheney (1993). The latter is more candid and comprehensive in matters relevant to defense planning.

6 We deal here only with military objectives potentially requiring the use of military forces in combat. There are other important objectives such as environment-shaping (arguably a means rather than an end), deterrence (related to but not identical with having warfighting capabilities), effective crisis response, peacekeeping, and peacemaking. Many of these are discussed in Davis (1994b).
by the North. Indeed, should war occur, the central regional campaign objective would be to conduct a successful forward defense of South Korea. This would be important because the capital city, Seoul, and much of South Korea's wealth is located close to the border.

Although we shall not elaborate here, the operational objectives, subordinate to stated campaign objectives, are often phased. For example, in the first phase of a campaign to defend South Korea, the United States would have an operational objective of successful rapid reinforcement of South Korean and U.S. capabilities in Korea in time to avoid collapse of the defenses.

The framing of military objectives for a particular region reflects the defensive capabilities of our local allies as well as the military capabilities of potential opponents who threaten our national interests and security objectives for that region. For example, even for a region as important to U.S. interests as Northeast Asia, preparations to conduct a successful forward defense would not be accorded the status of a U.S. national military objective unless it was perceived that the region was threatened by an opponent with the capability of carrying out an effective invasion or a damaging attack against local defenses. Thus, as the perceived intent and capabilities of potential enemies and our allies change, the relevance of a given U.S. national military objective for a particular region can intensify or fade. That relevance is also affected by such variables as economic and political conditions.

Regional Operational Objectives to Achieve

Once the Secretary of Defense and the Chairman of the Joint Chiefs of Staff (CJCS) have defined desired campaign outcomes, regional commanders must orchestrate the preliminary deployments and the employment of many different force elements made available to them. This level of planning has become known as operational art. In the course of these preparations, a number of different regional operational objectives are identified and pursued. These are stated in the campaign plan. Achieving these operational objectives, according to the campaign plan, attains the outcomes already stated.

The concept of military operational art as a distinct planning realm connecting strategy with military tactics was developed in the German General Staff and taught in the Kriegskademie in the period just prior to World War I. It was adopted and elaborated upon by the theoreticians and staff colleges of the Red Army in the interwar period and incorporated in Soviet military science. The general concept was embraced by the U.S. Army in the 1970s and 1980s and is reflected prominently in its AirLand Battle doctrine.
The following list contains some probable operational objectives subordinate to the regional campaign objective of "conducted a successful forward defense of South Korea." 8

- Halt invading armies short of Seoul.
- Gain air superiority:
  - Suppress generation of enemy air sorties.
  - Defeat enemy air attacks.
  - Defeat enemy air defenses.
- Provide command and control of force elements.
- Disrupt enemy’s command and control—especially, disengage leadership from control of deployed forces.
- Evict and destroy enemy armies once halted:
  - Interdict enemy ground forces.
  - Provide close support to friendly ground force elements.
- Prevent or defend against use of weapons of mass destruction.

Some of these objectives are more central than others. For example, halting invading armies short of Seoul is a central operational objective, while gaining air superiority is a supporting objective to which suppressing generation of enemy air sorties is itself subordinate. As we noted above, the weight of effort among operational objectives may also be phased. Attaining air superiority might be a prerequisite for the phase of the campaign that would "evict and destroy" enemy forces.

**Specific Military Tasks to Accomplish**

The next subordinate level of planning objectives differentiates among the major tasks that must be completed to achieve a stated regional operational objective. Needed here are statements of what different force elements in the region might actually do, so that collectively the desired operational objective is achieved. In our illustrative example, we further disaggregate the operational objective "provide command and control of force elements," and list the separate tasks subordinate to that objective:

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8We say "probable" because it would be possible, of course, to develop a different campaign plan, depending on the political-military context. Planning under uncertainty involves defining rich enough military campaigns for planning purposes so that the capabilities needed for a wide range of circumstances are generated and refined. Much can be built into individual campaigns when one appreciates the need for flexibility, but alternative campaign concepts are also necessary (Davis, 1994b).
- Conduct surveillance of the target areas and related support structures.
- Assess target data collected by sensor systems.
- Define target structure and individual characteristics.
- Allocate available resources among selected missions to implement theater concept of employment.
- Allocate specific targets among designated force elements.
- Select flight routes, tactics, and ordnance for specific targets.

A further illustration is provided by the operational objective “suppress generation of enemy air sorties.” The separate tasks subordinate to that objective are as follows:
- Crater runways.
- Mine operating surfaces.
- Disrupt/damage airbase infrastructure.
- Damage aircraft in open.
- Damage aircraft in shelters.
- “Pin down” takeoffs.

As shown above, several different tasks may be undertaken in pursuit of the same operational objective. The operational commander and the planner are confronted with the problem of allocating the appropriate weight of effort to each task relative to the others, depending in part upon the opportunity costs of using available force elements to accomplish one task rather than others and to achieve the stated operational objective rather than others.

Military tasks are defined as theater commanders refine their concept of employment of the resources they expect to have at their disposal in pursuing specified operational objectives. These concepts of employment indicate the probable allocation of effort among tasks: where, how frequently, and for what scope and duration force elements will be applied to the accomplishment of the various tasks.

THE PROPER ORGANIZING THEME—OBJECTIVES OR CONFLICTS?

In defense planning, to focus on “conflicts” (threat-based planning) invites attention to forecasts of enemy actions. Will the Soviets launch a major offensive against NATO? Will the leader of Iraq attempt to take over some country (or countries) rich in oil? Since we cannot know the answer to these questions,
we are left to lament, in the context of “conflicts” as our organizing theme, that we must plan in the face of great uncertainty.

To focus on objectives creates a much different construction. Although we do not know, with any certainty at all, what a potential enemy intends to do, we do know what we do not want the enemy to do: We do not want him to dominate a region in which our vital national interests would be threatened. Thus, a focus on objectives invites attention to what steps might be taken—political, economic, or military in nature—to shape the political environment in that region and to deter or dissuade an enemy leader in a particular region from engaging in activities (including military aggression) that impact on our vital interests. At the same time, we must ensure that we have the military capability to counter military aggression should it occur.

Said another way, we should focus on objectives in organizing our thoughts. This approach is quite distinct from a focus on “conflicts” as the organizing theme. Objectives are enduring. Whether or not there will indeed be an actual conflict in some region is not knowable and is a subordinate issue. In the final analysis, the outcome we seek is to attain our stated objectives in the absence of conflict. Thus, objective-based planning (according to a hierarchy of objectives) is both more relevant and more enduring.

RELEATING THE HIERARCHY OF OBJECTIVES TO ACTIVITIES

Establishing a relationship between the hierarchy of objectives and various activities to enhance military capabilities is crucial if we are to have a coherent approach. Figure 2 describes such a relationship.

Six Activities for Enhancing Military Capabilities

The DoD engages in six interrelated activities:

- **Worriers** identify deficiencies and missions in need of special and increased emphasis, make “Mission Need Statements,” and direct action be taken to explore new concepts. This is done in the presence of campaign and operational objectives defined and stated by regional commanders and statements of operational requirements by those commanders.

- **Technologists** identify promising technologies and direct that technology aggregates that have possible application to stated operational requirements be matured.

- **Conceivers** engage in concept development—formulating, defining, evaluating, and finally demonstrating new operational concepts for accomplishing tasks and new concepts for employment to achieve operational objectives.
This activity is central and is conducted in the presence of the Mission Need Statement and existing and emerging technology.

- **Acquirers** conduct programs for developing and acquiring new systems to implement selected operational concepts.
- **Deciders** decide about the allocation of resources. This activity (part of the PPBS) overlies all other activities except the first.

**DISCUSSION: WHY DOES ANY OF THIS MATTER?**

The top-down framework we describe here may seem unexceptional, and even obvious. However, decades of experience have indicated that making this framework or something like it into a reality is difficult and generally not practiced. In addition to its value in establishing a better understanding between Congress and the Department of Defense as defense budgets are approved, the framework can be a powerful unifying device for the national security community. It can help the many players in the executive branch (all the way from national-level strategists down to the military forces preparing to accomplish specific tasks in combat) to see how they and their responsibilities relate to one
another. Further, it can mitigate natural organizational processes that interfere with sound planning. These inhibiting and confusing practices include:

- Establishing and then maintaining and enforcing “requirements” at the wrong level of detail, as in establishing “requirements” (which are actually performance specifications) for particular weapon systems rather than for accomplishing military tasks and achieving operational objectives. In actuality, these tasks might be accomplished and the objectives achieved in any of several ways, with different methods being appropriate in different circumstances (e.g., as a function of enemy capabilities and strategy and of costs associated with alternative concepts).

- Establishing parochial mind-sets that undercut joint (and combined) operations to accomplish higher-level objectives.

- Overfocusing on some tasks and objectives while failing to address others that would be critical to the outcomes in overall campaigns.

In recent years this general framework (often and unfortunately misnamed the “strategies-to-tasks” approach) has been developed and applied successfully in a number of RAND studies for the Air Force, CINC’s, and Joint Staff. Figure 2 is a literal description of how RAND has organized and conducted some of its work (e.g., work sponsored and participated in by the Commander in Chief of the Strategic Command).

Much of the work has been in the context of rethinking how to accomplish both acquisition and the front-end work (e.g., creatively identifying operational concepts to accomplish tasks and achieve operational objectives, including efforts to exploit existing and emerging technology and other U.S. strengths) that should precede acquisition (Kent and Thaler, 1993). Some has been in the context of improving the effectiveness of CINC’s participation in the PPBS process (Lewis and Roll, 1993) and improving the coherence of Cost and Operational Effectiveness Analyses (COEAs). In practice, the framework and its embellishments have been succeeding in the marketplace.

**SUMMARY AND IMPLICATIONS**

We have shown how one can go coherently from stated national security objectives, to national military objectives, to regional campaign objectives, to operational objectives, to military tasks. There is a clear audit trail from top to bottom. Since we have subordinated from the top down, we can also integrate upward. For example, force elements acting in concert accomplish tasks that in the aggregate form the regional commander’s concept of employment to achieve stated operational objectives. Achieving operational objectives according to the commander’s campaign plan provides the means for attaining the stated campaign and military objectives for that region.
This hierarchy of objectives is at the very core of defense planning and offers real advantages. First, by specifying the ends to be sought at each level of planning, this approach provides clearer meaning to the strategies being formulated. Second, it provides a certain stability to our national security policies, year by year and era by era; the relative priorities among objectives and their specific character may change, especially at the national security and national military levels, but the essential elements provide a general continuity for the nation's defense effort. Third, when applied as a basis for constructing the DoD's Planning, Programming, and Budgeting System, it sets the stage for an allocation of national defense resources to best effect.

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Chapter 4

INSTITUTIONALIZING PLANNING FOR ADAPTIVENESS

Paul K. Davis

This paper proposes ways to improve the adaptiveness of U.S. military capabilities for the post-Cold War world. In the process, it proposes to integrate the currently distinct activities of strategic planning, program planning, and operations planning. Doing so would require new concepts and methods, and major institutional changes. The paper argues four main points: (a) strategic and program planning should adopt methods of analysis with an operational perspective, i.e., a campaign perspective, that highlight issues in actually employing forces effectively in diverse contingencies demanding different combat forces, support forces, and concepts of operation; (b) in its strategic and program planning, DoD should discard the traditional emphasis on meeting "requirements" for one or a few detailed defense-planning scenarios in favor of an approach that recognizes the enormous range of plausible scenarios (even within a given theater) and then allocates resources efficiently to increase the region of "scenario space" for which capabilities would be adequate; (c) DoD should organize operations planning around rapid and adaptive crisis planning, rather than dependence on monolithic "on-the-shelf" plans, and should be able to develop executable, strategically appropriate, and context-specific plans within days; and (d) to assure such capabilities, DoD should restructure its operations-planning system around building-block methods and frequent exercising monitored by a Readiness Inspector reporting to the Secretary of Defense.

BACKGROUND

In mid-1990 the Joint Staff's Director for Strategy and Plans asked RAND to conduct a study that would help define and communicate a new approach to defense planning emphasizing adaptiveness and realism in anticipating "nonstandard" contingencies—i.e., contingencies very different in detail from the standard defense planning scenarios that have dominated DoD planning for decades (Davis, 1994c). The request, by General George (Lee) Butler, was due to prior RAND work on planning under uncertainty (Davis, 1988, 1989; Winnefeld and Shlapak, 1990).

Before work had actually begun, Iraq invaded Kuwait in a prototypical example of a nonstandard scenario. Early project work focused on ideas for deal-
ing with the crisis and learning how to build alternative models of opponent reasoning to assist in strategy development (Davis and Arquilla, 1991a,b; Davis, 1994a). Subsequently, attention turned to the conceptual and organizational issues involved in making planning for adaptiveness (adaptive planning, for short) a reality. The Joint Staff was already making important changes in operations planning, but more far-reaching changes appeared desirable. Further, the problem involved not only operations planning, but also strategic and program planning. Comprehensive change would need the imprimatur of the Secretary of Defense. The challenge, then, was to develop the philosophy of adaptive planning, to identify methods for turning that philosophy into something practical and analytic, and to suggest ways to address the realities of organizational inertia. This paper briefly summarizes and extends the principal themes and conclusions of that study, which is documented in more detail elsewhere (Davis and Finch, 1993). These themes and conclusions are radical, calling for fundamental changes in the way defense planning is conducted. In the sections that follow I first discuss the problem itself, that is, the ways in which DoD planning has been ill suited for adaptiveness; I then identify components of organizational reform and discuss each of them at some length. Finally, I discuss some of the obstacles to reform and how they might be circumvented.

**BASIS FOR CONCERN: RIGID PLANNING**

**Rigidity? Hasn’t the DoD Always Been Adaptive?**

As a preface to stating the problem that motivated the study, it is worth emphasizing that the U.S. military has often proven remarkably adaptive. Most of its officers are highly competitive, well educated, and innovative. The services are also rightfully proud of their noncommissioned officers, who set a tone for their units and determine success or failure. Indeed, in the last fifteen years, the United States has enjoyed having military personnel generally of exceptionally high quality, and that quality is reflected every day in grass-roots adaptiveness. If there is a problem, then, it is not in our personnel.

What about our organizations, then? Here the story is mixed. On the one hand, the Department of Defense has adapted exceptionally well to many challenges over the years. Examples include the buildup for the Korean War, the logistics system established for Vietnam, the specialized units developed for

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1 I had two principal colleagues in the study: Lou Finch, who co-authored the study while at RAND before taking a senior position in the Office of the Secretary of Defense, and Paul Bracken of Yale University, who worked as a RAND consultant, particularly on organizational learning.
Vietnam, the development of the Rapid Deployment Force, and the doctrinal shift toward more operational-level aggressiveness (e.g., the AirLand Battle). The United States has also fielded the best systems in the world. When wars have arisen, plans have gone out the window as necessary and new ones have been developed (e.g., as in the Gulf War, which found the United States putting together a massive counteroffensive operation exploiting airpower in a way never before seen in warfare). And at the level of small-scale ad hoc crises, the U.S. military has generally done well (e.g., in Libya, Grenada, Panama, and Somalia). What, then, is the problem? Does a problem even exist?

**One Challenge Is Achieving Speedy Adaptiveness**

Having stated what the problem is not, let me now turn to what I believe the problem really is. The essence of the argument is as follows:

- In its strategic, program, and operations planning for large-scale conflicts (major regional contingencies or MRCs), the DoD continues to create rigidity that could be exceedingly dangerous early in such a conflict.

- That is, the United States is not well prepared for speedy adaptive planning early in large-scale crises or conflicts (i.e., adaptations made within hours or days rather than months and years).

- The United States has been lucky so far. Our adversaries have given us considerable time in which to ponder, react, and adapt. We cannot expect such a luxury in the future, especially since would-be aggressors drawing lessons from the Gulf War will surely conclude that a preferred strategy for dealing with the United States is to act quickly and decisively (see, e.g., Bennett, Gardiner, and Fox, 1994).

- The threat of fait accompli situations will be even more worrisome against adversaries with weapons of mass destruction (WMD), because dislodging them from their ill-gotten gains will be a more dicey proposition, both politically and militarily. In political-science terms, we should prefer to make deterrence work, because compellence—never easy—may become more difficult than ever (Millot, Molander, and Wilson, 1993; Watman and Wilkening, forthcoming).

- Deterrence is notoriously difficult, but an essential ingredient in success is often firm action early in crisis, even if that action is militarily (and politically) risky. Crises that could be quelled by such early action can quickly become disasters otherwise.²

²Without in any way underestimating the difficulty of taking the requisite actions, I would argue (Davis, 1994a) that Saddam Hussein's invasion of Kuwait and Serbia's aggression in the former Yugoslavia could both have been prevented by firm military and other actions early in crisis.
The Rigidity of Detailed Strategic, Program, and Operations Planning

Is it true that U.S. planning for large-scale conflicts has been rigid? After all, conventional wisdom in some circles has it that Cold War defense planning was well developed and sophisticated, although changes are now necessary to deal with diverse and vaguely defined current or potential threats. In fact, there were many serious deficiencies. Much Cold War planning could have been described with adjectives such as rigid, unrealistic, monolithic, and stereotyped. This was true despite the expressed desire of successive secretaries of defense for flexibility.

Consider, for example, the extraordinary emphasis placed on developing a single operations plan for the defense of Western Europe. This plan (and the mostly similar scenario used for programmatic work) depended on dozens of crucial assumptions that were treated as good predictions, despite everyone’s knowing better. Although military leaders surely thought about wartime adaptations, they were unable to develop them in detail, much less exercise them. As a second example, consider the 1990 Gulf crisis. Prior planning assumed: considerable actionable warning; a series of partial alerts, mobilizations, and deployments; and a particular sense of what was and was not to be defended. Not surprisingly, the assumptions were wrong (indeed, the United States did not even begin deployment until D+4!). Had Saddam Hussein continued into Saudi Arabia without delay, the United States would have had an extremely difficult time countering the invasion—not only because of the distances involved and political constraints, but also because it was ill prepared to make major changes in large-scale operations rapidly. There had been inadequate discussions with political leaders about alternative military objectives and strategies (e.g., defending Kuwait rather than Saudi Arabia), there were few preliminary measures taken in response to strategic warning, the military planning system was too slow in adapting, there were major misunderstandings about what could realistically be done by a deploying CINC and his staff, the on-the-shelf plan was sketchy, and adaptations made by the CINC could not be accommodated gracefully by the command-and-control system.

An Organizational Obstacle: The Deliberate Planning System

Despite important recent reforms in U.S. military planning, the current system is unlikely to meet the challenge posed above because much of it is still

³The Joint Staff’s new guidance to CINCs requires them to consider multiple scenarios and to develop plans with some built-in flexibility, somewhat akin to that of
structured around so-called “deliberate planning.” The system includes many features likely to undercut capability for rapid adaptive planning in large and complex contingencies that cannot be handled effectively by the excellent crisis-action teams that now exist. To be sure, the deliberate planning system includes many critical functions that must be retained (e.g., developing and testing procedures, databases, and planning factors), but even the improved version of deliberate planning is fundamentally flawed. In particular, deliberate planning:

- Produces a few detailed plans (albeit with significant flexibility within those plans) rather than refining an adaptive planning process able to deal quickly with challenges not foreseen in the preplanned options.
- Has no routinized testing of plans or adaptive planning for nonstandard situations. (It is analogous to a football team building playbooks and options without the benefit of stressful practice and games to test, refine, and broaden the options.)
- Has no success standards relating directly to crisis planning (e.g., rapid adaptiveness and flexibility for the President).
- Does not include many of the participants that would be most significant in crisis and does not go far enough in laying the framework for coordinating political, economic, and military instruments (which coordination would be an NSC function).
- Relies on communications, obsolete data-processing systems, expertise, and other supporting tools that are inappropriate for crisis operations.
- Discourages planners from dealing often enough and well with scenario variants that are decidedly nonstandard.

To elaborate on this last item, consider the importance of thinking through scenarios currently deemed improbable (until they happen) or “unacceptable” (e.g., scenarios presupposing a type of U.S. military involvement currently believed to be undesirable). Ideally, planners should routinely be working through nonstandard scenarios that are objectively plausible and important, whether or not they are pleasant to contemplate (Kugler, 1994). For example, it is entirely appropriate for DoD to study in detail possible strategies for deterring a Russian reinvasion of Lithuania or Ukraine, including strategies focused on deterrence through threat of punishment rather than capability to defeat an invasion. Similarly, DoD should be constantly studying—long before they become salient—potential strategies for contingencies as unpopular as limited football teams, which have options triggered by “audibles” before the snap. For discussion, see Davis and Finch (1993:53ff).
military intervention in the former Yugoslavia under various coalitional arrangements and with various distinctly limited objectives.4

Philosophical Obstacles to Speedy Adaptiveness: Desires for Clear Objectives, Political Consensus, and Decisive Force

One obstacle to planning for prompt adaptiveness is the U.S. military’s understandable antipathy toward ad hoc operations undertaken without careful consideration of potential consequences and development of both political consensus and determination. Still another obstacle is the military’s desire to go into any conflict with overwhelming force so that casualties can be minimized and objectives achieved decisively. Under General Colin Powell, this emphasis on decisive force became a key element of military doctrine.

Unfortunately, there is a tension between, on the one hand, a reasoned and deliberate approach that avoids risks to tripwire forces5 and eventually produces overwhelming force, and, on the other hand, the need in many crises for prompt and politically decisive actions. For example, the invasion of Kuwait would probably have been averted if the United States had been willing and invited to deploy a small tripwire force directly into Kuwait (Davis and Arquilla, 1991a), backed up by tactical air forces in Saudi Arabia. Instead, for a variety of reasons that included attitudes of regional states, the United States attempted to show resolve with the most timid of military actions, which was probably a counterdeterrent. Significantly, the use of militarily insignificant and potentially counterproductive “signals,” rather than the dispatch of more substantial military forces into harm’s way, is a psychologically natural approach that nations continue to use in attempts at deterrence. U.S. Flexible Deterrent Options (FDOs) may have these problems (Davis, 1994a).

A major problem here is that leaks can cause a political brouhaha, as occurred in 1991 when DoD was criticized for having a defend-Lithuania scenario. Some prominent members of Congress worried that DoD was getting out ahead of national policy and seeing vital interests, and threats to those interests, where neither existed. The greater danger is that the United States will fail to think seriously about politically troublesome contingencies until after they occur and it becomes clear that U.S. interests are greater than they previously appeared to be (Davis, 1994a).

These risks should not be underestimated. Army officers all remember the disaster of Task Force Smith at the outset of the Korean War. Fortunately, the United States today has the option to insert small, lethal, and mobile forces, with survivability enhanced by supporting tactical and long-range air forces. In some cases, precision-strike capabilities from standoff positions can be substituted for classic tripwires. In other cases, however, tripwire forces on the ground may be needed. The risk to them must be weighed, in each case individually, against the potential for avoiding a much larger and bloodier conflict.

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A Final Problem: Planning for Adaptiveness in an Era of Tight Budgets

So far, I have emphasized speedy adaptiveness in crisis. But there is another problem. While it is true that the U.S. military has been remarkably adaptive in past crises and wars over a time scale of months and years, much of that has been possible only because it had a massive military establishment. Equipment in short supply could be borrowed from other units, capabilities believed only by a minority to be important could be procured and protected, and mass could compensate for specialized capabilities (Lewis, 1994). We will not have such luxury in the years ahead. Instead, the pressure will be to eliminate all but the most critical of capabilities, which in turn will translate into eliminating capabilities (e.g., light infantry) that are less prestigious but critical in some circumstances (Davis, 1994c). Unless the planning system changes so as to highlight the existence of “holes,” the scaling-down process will seriously hurt U.S. military adaptiveness.

TOWARD A NEW APPROACH TO EMPHASIZE ADAPTIVENESS

Under the assumption that one is convinced that the United States badly needs to improve its planning for adaptiveness, what steps should be taken? RAND’s study for the Joint Staff (Davis and Finch, 1993) recommended an approach with four key elements of reform. Taken together, they would be revolutionary. They were: (a) reconceptualizing planning to more seriously confront the issue of uncertainty, building heavily on recent Joint Staff initiatives; (b) building-block planning for rapid plan development and adaptation; (c) revising organizational relationships to better integrate work on strategy, programs, and current operational planning; and (d) constant exercising of the system’s capabilities.\(^6\) Let us now consider each of these in turn.

PLANNING UNDER UNCERTAINTY: A NEW WAY TO CONCEPTUALIZE THE PROBLEM

The preeminent challenge of U.S. defense planning is dealing with uncertainty (Davis, 1994c). It is this challenge that leads to requests for adaptivity—

\(^6\)Some officers to whom the study was briefed believed that major reforms were well underway and that operations planning, at least, had already become sufficiently adaptive. We were unconvinced, and concluded that the organizational changes underway were insufficiently radical; further, even those changes might slip into history as normal organizational processes reassert themselves (see Davis and Finch, 1993:102).
ness. There are literally hundreds of critical factors that determine what constitutes an appropriate military strategy in time of crisis or conflict. How does one take all of these into account in planning? And how is this different in the cases of strategic, program, and operations planning?

**Discarding the Illustrative-Scenario Approach**

In our study we concluded that the first step should be to reject categorically, once and forever, the longstanding approach of focusing on one or a few standard scenarios. Planning would still use scenarios, and there would still exist analytical baseline cases, which are essential for guidance and analysis, but the baseline cases would no longer form the centerpiece of planning (and would include cases very different from current planning scenarios). So long as standard scenarios are the centerpiece, and despite protestations to the contrary, many peacetime planners will come to treat them as predictive and will develop mental attitudes, analytical constructs, and procedures making rapid adaptation in crisis difficult. Empirically, we know that calling the scenarios "illustrative" has never solved this problem, because organizations yearn for concreteness and the "test cases" become "the" cases. This is especially so with respect to organizational processes, routines, and measures of effectiveness.\(^7\)

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\(^7\)This recommendation may seem unreasonable to some readers who, like me, have actually done program planning. Defense-planning scenarios have been exceptionally valuable for managing the Department of Defense (e.g., by establishing a common yardstick by which competing programs can be measured and by simplifying the task of coordinating the efforts of four military services with respect to both combat and support capabilities). Further, such scenarios have been a major tool in selling the defense program to Congress. Experienced individuals such as Les Aspin and William Kaufmann have argued that selling uncertainty doesn't work and that DoD must focus on one or more specific and plausible contingencies (Kaufmann, 1992:27). My response here is twofold. First, as discussed later in this paper, analytical baseline cases would continue to exist under the new approach. There would be more of them, but this would improve the quality of defense management and should not overload the system given an appropriate choice of people to oversee analysis in DoD and the services. Second, the ability to "sell" the defense program with "requirements" for two specific MRCs is probably not sustainable in any case (Davis, 1994c). DoD and Congress will need to learn how to do more candid assessments of what and how much is needed. For much more extensive discussion of the scenario issues, see Kugler (1994); for another critical view of standard scenarios, see Builder (1993).
The Scenario-Space Methodology

The next step is to conceptualize the planning problem as one of dealing with a large "space" of plausible scenarios. This does not mean simply having one scenario for each of many geographical regions. Instead, each currently standard scenario for a given geographical region (e.g., North Korea's invasion of South Korea) should be considered merely one point in a large space of possible scenarios. This scenario space can be thought of as having six aggregate dimensions, as indicated in Figure 1, with a single scenario being just one point in that many-dimensional space.\footnote{This breakdown is intended to be practical, not merely conceptual. My colleagues and I have used it to characterize scenarios and to design multiscenario analyses involving many hundreds of variations. Such broad exploratory analyses, which are still quite unusual, are often exceptionally informative. See Davis (1988), Bankes (1992), and, for at least brief mention, Rostker, Don, and Watman (1994).}

Note that in this perspective almost nothing is "fixed." There is a willingness to face up to what is truly massive uncertainty. For example, we often do not know within a factor of two how effective various enemy and allied forces would be in combat, even though we understand their weapon holdings and order of battle. Nor do we even know, in advance, what political-military objectives will be established, because those will depend on details of the situation. Even the "military science" is riddled with uncertainties, as should be evident to those who recall the dramatically different before-the-fact estimates of likely U.S. casualties in the counteroffensive that began against Iraq early in 1991. The point here is this:

- Uncertainty is not a mere nuisance requiring a bit of sensitivity analysis; it is a dominant characteristic of serious planning.

Single-scenario analysis makes no sense at all, except for its managerial advantages in peacetime.

Obviously, the United States cannot reasonably seek military capabilities assuring success in all scenarios. However, defense planners should know "the envelope," i.e., know what portions of scenario space the United States could now and should in the future be able to deal with effectively—perhaps assuming a bit of luck. This concept of scenario space and the coverage envelope of a particular U.S. force may be useful to defense planning in several ways.

**Pushing Back the Envelope as an Objective.** Instead of focusing on meeting "requirements" for standard scenarios, defense programs could focus on improving capabilities for entire regions of scenario space. Figure 2 illustrates this for a broad class of scenarios described by the items under "Case"
1. **Political-military setting** (e.g., origin of crisis; alliances; broad interests; and timing of warning, alerts, mobilization, deployment, etc.)

2. **Operational objectives and strategies** (for the U.S., opponents, allies, and third countries)

3. **Forces and other instruments of power** (e.g., orders of battle, structure of units)

4. **Weapon-system and individual-force capabilities** (e.g., accuracy of precision munitions, the movement rate of armored units, efficiency of command-control systems, and the qualitative effectiveness of officers and men resulting from training, morale, and other factors)

5. **Geographic and other aspects of environment** (e.g., weather, terrain, transportation networks, and port facilities)

6. **The processes that govern military operations, including combat** (e.g., the equations describing the phenomena of combat and movement)

**Figure 1—Dimensions of Scenario Space**

**Figure 2—Notional Objectives Expressed in Scenario-Space Terms**

**Case:**
- Armored invasion of Kuwait and Saudi Arabia in 1997
- U.S. has "Base Force"; regional allies have 3 EDs.
- Regional allies hold temporarily; U.S. responds with air forces and more slowly deploying ground forces
- U.S. gains air supremacy within 10 days of C-day
(war with Iraq, revisited). Within this context, the x and y axes represent two of the most important scenario variables, the time available before D-day and the size of the enemy threat. The diagram then expresses notional objectives as follows: we want the capability to deal with all the scenarios in the light region inside the “envelope boundary for assured success.” We also want the capability to deal successfully—given favorable circumstances with respect to other scenario variables (e.g., weather and allied cooperation)—with all the scenarios in the region with slashes. By contrast, we do not seek the capability to deal successfully with the scenarios in the dark region, except perhaps in instances in which all other factors are highly favorable. Note that objectives are expressed in terms of a region in scenario space, not a particular point scenario.

Figure 3 is a discretized representation of similar notional objectives (or what some might call requirements), but with some additional nuances treated. Here again, “light” means that the requirement is for success without demanding much luck; slashes mean that the requirement is for success in instances in which circumstances are favorable; and dark indicates cases that are too hard (or too expensive) to deal with rapidly. We would need to consider them also, but with different kinds of strategies, such as a lengthy campaign to reenter the region.

<table>
<thead>
<tr>
<th>Constant features of the scenario</th>
<th>Political-military situation dictating strategy and concept of operations</th>
<th>Time deployment begins</th>
</tr>
</thead>
<tbody>
<tr>
<td>• General setting: Iraq invades Kuwait and Saudi Arabia in 1997</td>
<td>1. Armored invasion. Saudis and Kuwaitis can hold ground for perhaps a week.</td>
<td>Very late: after D-day</td>
</tr>
<tr>
<td>• Favorable coalitions</td>
<td>2. Armored invasion. Saudi and Kuwaiti armies will collapse within a very few days.</td>
<td>Fairly late, e.g., D-1 to D-7</td>
</tr>
<tr>
<td>• Early U.S. air force supremacy</td>
<td>3. As in 1, but Iraqis have medium-range missiles and both chemical and nuclear weapons.</td>
<td>Early, e.g., before D-7</td>
</tr>
<tr>
<td></td>
<td>4. As in 2, but Iraqis have medium-range missiles and both chemical and nuclear weapons.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. As in 1, but with simultaneous revolution in Saudi Arabia, including fighting in cities and ports.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Revolution in Saudi Arabia with Iraqi infantry and dispersed armor entering unopposed by “invitation.”</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3—An Illustrative Scenario-Space Display of Objectives
Figures 2 and 3 assume that we know our objectives, but in reality cost is always a factor, whether explicitly or implicitly (Davis, 1994c). Figure 4 illustrates how one can use this type of scenario-space display to appreciate program choices. It shows capabilities as a function of programs with different costs. Note that Figure 4 includes information about six different scenarios varying in effective enemy force level and the deployment time available to the United States before D-day.

Classes of Scenario and Generic Campaigns

Dealing with the enormity of scenario space would be nearly impossible if it were not for the fact that large regions of scenario space would involve similar military activities. To implement the scenario-space approach it will be necessary, for each region, to identify such classes of scenario, and, for each such class, to define generic concepts of operations or, to use a shorter phrase, generic campaigns. Being able to conduct such campaigns then becomes the objective around which systematic military planning can take place. Figure 5 indicates schematically how this differs from past practice.

![Figure 4](image)

**Figure 4—An Illustrative Display of Projected Capability as a Function of Threat, Reaction Time, and Budget Level**
<table>
<thead>
<tr>
<th>1980s</th>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>One scenario for global war with Soviet Union. Requirements to be able to prevail militarily in the scenario.</td>
<td>One scenario for regional wars in each of Southwest Asia, Korea, plus some discussion of “generic” scenarios at a very high level of abstraction. For each specific scenario, requirements to be able to prevail militarily.</td>
<td>For each region of concern, a set of campaign classes, each with its own generic concept of operations. For each class of campaigns, extensive exploration of scenario and campaign variations and an effort to “push back the envelope” on the scenario-space region that can be handled.</td>
</tr>
</tbody>
</table>

Figure 5—Proposed Replacement of the Single-Scenario Approach

To illustrate the concept of classes of campaigns, consider again the example of a new war in the Persian Gulf (a reader finding this example “old” may want to think about the same issues for Korea or a war in Eastern Europe). Consider next that the time available for deployment before D-day is impossible to know in advance. Clearly, however, this variable is very important, as suggested earlier in Figures 2 and 3. Some cases are “impossible,” but suppose we distinguish between the class of cases in which there is at least enough time to deploy so that the U.S. forces are in place before major losses of territory and bases occur, and the class of cases in which by the time U.S. forces arrive there are significant but not catastrophic problems at key bases and, perhaps, in the capital cities of our allies (e.g., due to an internal revolution fomented by Iraq in coordination with the invasion). In the former case, the premium would be on armored forces and firepower; in the latter case, the premium would be, initially, on forced-entry capability and firepower.

Figures 6 and 7 now illustrate schematically how different the concepts of operations would be for these two classes. That is, the campaigns would be very different.

How many classes of scenario are there? That is a subject for research that has not yet been accomplished. Clearly, there are more than two. To continue the Southwest Asian example, there is a class of scenarios in which the United States would have to fight its way back onto the northeastern side of the Arabian peninsula over a period of many months. Perhaps there are many more. However, my experience to date suggests that distinguishing among a few classes (for each “broad” scenario such as a new invasion by Iraq) goes a long way in laying bare the full range of needs, assuming extensive exploration of variations around a baseline case for each class.
<table>
<thead>
<tr>
<th>Time (weeks)</th>
<th>D-day</th>
<th>D+7</th>
<th>D+10</th>
<th>D+60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional allies (target of aggression)</td>
<td>Conduct holding operations to protect key areas</td>
<td>(Continue as capable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic bombers</td>
<td>Blunt armored attacks</td>
<td>Attack air bases, C3I and armies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Operations forces</td>
<td>Secure key points; provide recon; etc.</td>
<td>Conduct diverse support operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground-based air defenses</td>
<td>Defend key air and sea ports</td>
<td>Plus defend important areas</td>
<td>Plus defend theater air space</td>
<td></td>
</tr>
<tr>
<td>Light infantry</td>
<td>Defend key air and sea ports</td>
<td>Defend other key points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air defense aircraft</td>
<td>Defend key areas</td>
<td>Attack enemy air forces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveillance and battle-management aircraft</td>
<td>Support defensive operations</td>
<td>Support counter-air operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fighter aircraft for air-to-ground missions</td>
<td>Conduct SEAD operations</td>
<td>Attack LOCs and ground forces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fighters and bombers for &quot;strategic&quot; bombing</td>
<td></td>
<td></td>
<td>Attack air bases and C3I</td>
<td></td>
</tr>
<tr>
<td>Armored forces (including MPS Marines)</td>
<td></td>
<td></td>
<td>Conduct counteroffensive (Army and Marines)</td>
<td></td>
</tr>
<tr>
<td>Support forces</td>
<td>Support defensive operations</td>
<td></td>
<td>Support counteroffensive</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6—Concept of Operations for Adequate-Warning Situation
### Figure 7—Concept of Operations for Forced-Entry Situation

<table>
<thead>
<tr>
<th>Time (weeks)</th>
<th>D-day</th>
<th>D+47</th>
<th>D+10?</th>
<th>D+20?</th>
<th>D+120?</th>
</tr>
</thead>
</table>

#### Regional allies (target of aggression)
- Do best possible to survive coup de main tactics and internal revolution
- Retake and secure key areas. Reestablish control. Reestablish armed forces, CSF, etc.
- Participate in counter-offensive

#### Strategic bombers
- Attack enemy's homeland for compliance?

#### Special Operations forces
- Support and conduct assault operations
- Conduct diverse support operations

#### Ground-based air defenses
- Defend key air and sea ports
- Plus defend important areas
- Plus defend theater air space

#### Light infantry
- Assault and capture, then defend, key air and sea ports
- Protect allied leadership, CSF, etc.
- Defend other key points
- Retake and secure some key urban areas. Reestablish friendly government.
- Conduct infantry operations in difficult terrain

#### Air defense aircraft (Air Force and Navy)
- Provide air cover for deploying forces
- Attack enemy air forces

#### Surveillance and battle-management aircraft
- Support defensive operations
- Support counter-air operations

#### Fighter aircraft for air-to-ground missions
- Support operations as feasible from available bases and carriers
- SEAD
- Attack LOCs and ground forces where possible

#### Fighters and bombers for "strategic" bombing
- Support operations as feasible from available bases and carriers

#### Armored forces (Army and MPS Marines with significant armor)
- Defend key areas (MPS units)
- Conduct counter-offensive (primarily Army)

#### Support forces
- Support defensive operations
- Support counter-offensive
Taking such a multiscenario analysis approach has many effects on one's thinking. It highlights the possible need for capabilities that are unnecessary in standard cases, or for having those capabilities available much earlier than normally assumed. It also illustrates dramatically how sensitive contingency outcomes can be to details of operational strategy and, significantly, to the adaptiveness of the strategies followed. And, finally, it gives those participating in such work an excellent sense for how military strategy could be adapted in a wide range of circumstances—i.e., it builds the expertise needed for at-the-time adaptations. In peacetime analysis, this amounts to developing the expertise needed to put together substantially different strategies and scenarios in a matter of hours rather than months.9

NEW OPERATIONS PLANNING: AT-THE-TIME PLAN DEVELOPMENT USING BUILDING-BLOCK METHODS

If one buys into the general concept of taking uncertainty seriously, and of using scenario-space methods to discuss it, how does one go about the practicalities of operations planning?

To military officers experienced in crisis action, the approach needed for planning military operations under uncertainty is fairly obvious: refine the skills and processes needed to create plans at the time of the crisis or conflict, without pretending to be able to anticipate the details in advance. Doing so involves thinking through many versions of a class of crises, identifying actions that could be taken and forces that could be used, and thinking of them as “building blocks” to be assembled appropriately when the time comes. This is indeed what good officers do already when they can; it is quite natural to competitive and adaptive American officers. The deliberate planning system, however, is poorly structured to exploit these talents and attitudes, even with the new changes, and the crisis action system is not designed for large-scale operations. As a result, the United States today would have great difficulty

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9 Techniques for defining and experimenting with realistically adaptive military strategies in theater-level war games and simulations were highly developed in the late 1980s in RAND research sponsored by Andrew Marshall, the Director of Net Assessment in the Office of the Secretary of Defense. See, e.g., Davis and Howe (1990). Adaptive logic of an algorithmic “optimizing” character is included in RAND’s TACSAGE model and an emerging simulation system (TLG), both designed by colleague Richard Hillesstad. By and large, however, most military simulations still depend on scripted strategies and tend to deemphasize the critical importance of adaptive logic.
adapting quickly to a subtle, complex, and fast-breaking major regional contingency that departed substantially from in-going assumptions.\footnote{It is likely that the most difficult adaptations would be those in which basic assumptions about military objectives, allies, or mobilization proved wrong. One example might be if the President decided to attempt to deter or counter an imminent invasion of a nation, the independence of which was not, in itself, a "vital" national interest.}

Key to achieving this type of adaptive-planning capability is a great deal of practice, experimentation, and learning. This would include war gaming and exercises, no-notice testing to produce realistic and executable plans, and participation of civil leaders who would formulate policy in a crisis—and who often might make decisions that military leaders might not like, because of a variety of political constraints, and because of different strategic judgments. The criterion for success would not be the richness or efficiency of plans for dealing with standard scenarios well known in advance, but rather the ability to produce quickly viable plans covering the range of political-military objectives that a President might want to consider.

The vision, then, recommends a new approach to operations planning (Figure 8) that would deal with organization, methods, training and exercising, and decision-support tools. It would:

- Eliminate the deliberate-planning system (although retaining many of its functions, which are critical in laying the building-block groundwork for any kind of operations) and greatly extend the crisis-action-planning system.

- Develop in moderate detail, for each of a number of geographical regions, multiple "analytic baseline" plans for points in scenario space representative of different classes of scenario, with each class being characterized by a significantly different concept of operations.

- Allocate levels of effort so that baseline plans are only starting points, with most effort being directed toward exercising rapid-planning capabilities for variants from the baselines. Criteria for exercise success would be executability of plans, political-military appropriateness of the options, and robustness of plans with respect to plausible opponent actions and random events.

- As part of the testing of the rapid-planning system, evaluate and refine building-block operations and force modules, as well as ways to compensate when building blocks don't quite work.

- Exploit new decision-support technologies for planning and for planning, conducting, and evaluating exercises, including distributed interactive simulation and distributed war gaming.
Figure 8—Components of an Overall Approach to Operations Planning
NEW DEFENSE PLANNING RELATIONSHIPS: INTEGRATING STRATEGIC, PROGRAM, AND OPERATIONAL PLANNING

Overall Approach: Creating a Common Framework

So far, I have focused mostly on operations planning, but the study also sought ways in which the methods of strategic, programmatic, and operations planning could be better integrated (without losing track of the distinctions among them, which stem from their different purposes and time scales). Figure 9 summarizes the approach. It starts (left branch) by recognizing a need for national-level planning guidance to assure integration of political, economic, and military instruments of contingency operations. DoD would take the lead in staffing and developing the appropriate interagency operations, but the NSC would guide the effort. A second key element is establishing a common intellectual framework, which needs to reflect an "operational perspective." That is, all types of planners should have the objective of producing effective capabilities for real-world operations in crisis, which means that thinking in terms of capabilities for successful military campaigns should be central. With this in mind, the third component involves methods of analysis focused on scenario-space concepts, generic campaigns and generic concepts of operations, and multiscenario analysis exploiting modern simulation technology over many thousands of cases, not handfuls.\(^\text{11}\)

Given the challenge of this idea and the range of skills needed, how might it be accomplished? If the deliberate-planning process is eliminated in favor of a new process focused on developing the capability for rapid adaptive planning at the time of crisis, then personnel in this system would spend some time developing detailed baseline plans, a great deal of time performing sensitivity analysis and problem exploration, and considerable time training or exercising crisis-planning capabilities under realistic conditions.

In our study we recommended that:

- Operations planners should rotate among assignments involving near-term operations planning and operations-planning-style assessment of possible future capabilities that might be included in the defense program.
- The latter assessments should be conducted in an activity sponsored by the Secretary and Chairman jointly. It should involve both the military planners and civilian analysts from OSD and, in some instances, other agen-

\(^{11}\)In this integrated approach, the emphasis in program planning should be on capabilities analysis and marginal analysis, since there are enormous uncertainties about effective threat levels and scenario details and we cannot afford to buy unlimited insurance. Further, marginal-analysis methods should be used to determine how much of a capability it is sensible to have, given competing priorities within a fixed budget.
Figure 9—Components of an Approach to Integrating Defense Planning
cies. It should be managed by the Joint Staff so that activities could readily involve appropriate personnel from the CINC staffs, using methods, software, and equipment relevant to crisis-action planning where appropriate. Some of these activities might be supported or supplemented by federally funded research and development center (FFRDC) efforts.

- The Joint Staff should consider defining documents to be produced routinely from this activity to be part of the Joint Strategic Planning System, PPBS, and DoD participation in the postulated NSC-level activity on cross-agency contingency planning. Alternatively, it might define a process that would identify each year key reports to be developed over the next two years.

- In organizing particular activities, the Joint Staff should consider adopting a task-force framework suggested in Figure 10 (adapted from Kent and Simons, 1991).

The framework of Figure 10 employs teams of people that break down as shown into worriers, conceivers, technologists, and so on. The "conceivers" are people such as operations planners, who are able to solve military problems identified by the "worriers" (e.g., analysts and mid-to-long-range planners from the services, Joint Staff, CINC's, OSD's Office of Net Assessment, and FFRDCs) by constructing notional campaign plans (concepts of operations) that would employ capabilities proposed by the "technologists." Such concepts would be evaluated with analysis and gaming (including, perhaps, complex distributed war gaming). Where they proved attractive, they would be picked up by those who build and manage programs, and eventually by the operators.

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12 Some readers with long memories will note similarities to the concept of an ingovernment Strategic Assessment Center proposed a decade ago. See Davis and Winnefeld (1983) for discussion of those ideas, including government intentions at the time. What emerged was an analytic war gaming system (the RAND Strategy Assessment System or RSAS), which is used extensively in the war colleges and for quite a number of studies. The more sophisticated studies, however, have been conducted by RAND (for a variety of OSD, Joint Staff, and service sponsors), rather than in the government itself.

13 The studies at issue here might range widely in character and might include items that were somewhat comparable to such older documents as the annexes of the Joint Strategic Planning Document (JSPD), the Strategic Mobility Requirements Study (SMRS), the reports on Total Force Capabilities Analysis (TFCA), the Congressionally Mandated Mobility Study (CMMS), and various regional studies done in OSD (PA&E).

14 This framework is quite powerful and is being proposed by our colleague Glenn Kent as an organizing principle for restructuring the way in which the DoD approaches both R&D and acquisition.
who would use them. From the start, however, the activity would include representatives of all types of planning.

In this approach there would be a ubiquitous role for analysts in defense planning, as indicated in Figure 11, which may at first glance look like a standard top-down planning diagram. Upon inspection, however, note that analysis plays a pivotal role at all stages. Indeed, even the initial top-down guidance must (or at least should) follow initial analysis to decompose the scenario space problem into workable pieces of greater and lesser importance. In my image of post-Cold War defense planning, there should be a great deal more multiscenario analysis and a great deal less in the way of arbitrary or semiarbitrary "requirements" and point scenarios. In this vision, then, the information flowing from one type of planner to another is rich, sophisticated, and framed to deal well with uncertainties of all kinds. Analysts are essential in making that information transfer work.

Given a particular class of campaigns, it is possible to systematically identify the operational tasks that must be (or at least may need to be) performed, thereby working from an operational-level concept to challenges that must be met by properly orchestrated tactical operations and systems. Competing methods for accomplishing the same tasks can and should be identified and
evaluated. The "requirements" (or, better, the objectives) are the ability to do the various tasks, not the need to buy a particular weapon system.  

**Shared Experience and Feedbacks**

We have discussed the first three components of Figure 9. The fourth component of the approach is to assure that the various types of planners have shared experiences by rotating across boundaries in their assignments, by participating in war games and other exercises, and by having some common professional outlooks.

Finally (rightmost branch of Figure 9), the approach involves a series of formal feedbacks and interconnections:

- Strategic planners (NSC, OSD, CJCS, State) would formulate broad guidance about desired current and future capabilities using scenario-space con-

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15See Kent and Simons (1991) and Thaler (1993) for detailed description of the "strategies-to-tasks" methodology developed by colleague Glenn Kent and applied widely within the Air Force as a means for clarifying thought and assuring that alternative ways to accomplish essential missions are considered. Kent now prefers the methodology to be called objectives-based planning because it proceeds from operational objectives downward.
cepts. Guidance would specify key regions in scenario space and suggest policy-relevant criteria for testing capabilities (e.g., conditions for the use of force, war termination objectives, acceptable costs in casualties and fiscal resources, timeliness of planning response, and the range of options available to the President).

- Operations planners, when not doing field duty, would rotate between two kinds of assignments: (a) near-term operations planning, and (b) similar work conducted in support of mid- and longer-term studies related to strategies and programs. They would use closely similar methods and tools. Results would be fed back to strategic planners and program analysts to give insights about what was feasible with different degrees of risk and dependence on special circumstances, and what capabilities appeared to be most and least important.

- Program planners would conduct additional analyses and would then formulate and assess programmatic options. Initial option assessment and narrowing would be conducted by the program planners themselves. Their products might again be fed to operational planners for evaluation.

- For this process to work effectively, it would probably require neutral oversight. Given that power relationships among participating institutions could be strongly affected, there would seem to be inherent pressures on this process to bias testing and reporting to serve institutional interests. Therefore, creation of a "Readiness Inspector" reporting to the Secretary of Defense and Chairman should be considered.

- Finally, the product of this process (including uncertainty analysis), might, after suitably removing diplomatically sensitive material, be used before Congress as the evidentiary basis for the President's budget and programs. Conceivably, a very few senior congressional representatives might also usefully participate in parts of the testing process itself, given the substantial role Congress plays in determining the circumstances under which military force would be used.

**ORGANIZATIONAL CHANGES FOR IMPROVED DEFENSE PLANNING**

Many changes will be needed if the vision is accepted. With the exception of the new Readiness Inspector for defense planning, no existing institutions would be created or eliminated, but changes in what planning organizations do and how they do it would require bold initiatives. The most important changes (consistent with Figure 9) are as follows.

The NSC and its staff should:

- Formulate and coordinate the requisite interagency studies, implementing directives, and legislative requests.
• Provide strategic policy guidance.
• Actively participate in exercises to test operational planning.

The Secretary of Defense and his staff should:
• Overhaul the Planning, Programming, and Budgeting System (PPBS) to make it responsive to the objectives of the approach. This would include changing standard measures of effectiveness used in reviewing defense-program options and educating OSD officials with respect to the kinds of challenges faced by operations planners.
• Direct appropriate high-level participation in crisis planning exercises and tests of the crisis-planning system.
• Assure that the operational planning system is able to produce executable plans with options appropriate for presentation to the President.
• With the Chairman, use a newly created “Readiness Inspector” for defense planning to provide an independent assessment of the testing methods and results.

The Chairman of the Joint Chiefs of Staff should:
• Develop a permanent staff of war planners to work with CINC staffs in honing the skills and processes needed for the new system. The Joint Staff participants should think of themselves as “strategic assemblers” rather than mere coordinators.
• Put into place the technology to facilitate close teamwork between the Joint Staff and CINC staffs. This would include extensive model-supported videoconferencing—for staffs, not just for commanders.
• Develop highly interactive and user-friendly computer models and databases for effective building-block planning. This decision-support system would be very different in nature from the JOPES system, which reflects the “data-processing mentality” of an earlier generation of technology and a different part of the technical community than that responsible for, e.g., the successful DART interface.
• Institute a program of command-post exercises to assure effectiveness in rapid planning. This program would include no-notice test exercises with only rudimentary prior knowledge of the crisis to be focused upon, and with realistically complex changes of political-military ground rules occurring in the course of the exercise. Follow-up studies should determine the degree to which plans developed in the exercises could, in fact, have been executed.
• Become an active but cautious and analytically critical early user of both distributed interactive simulation (DIS) and associated war gaming on the one hand, and highly interactive analytic war gaming models on the other.
• Develop information requirements to assist rapid adaptive planning (e.g., requirements for services and CINC's to define a wide variety of standard support packages for ground, air, and naval units operating in different circumstances of terrain, potential opposition, mission, and time criticality).

The War Colleges should, even if it means sacrificing other courses:

• Revise curricula to introduce basic concepts of planning under uncertainty and adaptive planning, and provide officers with personalized computer tools to experiment with adaptive planning (e.g., microcomputer war games with intelligent opponents and allies, and with random factors affecting decisions and operations).

• Devote more curriculum attention to realistic assessment of opponent capabilities and opponent reasoning, with an eye toward refining officer capability to understand tradeoffs between the virtues of timely actions for deterrence and delayed actions with more substantial forces.

CONCLUSIONS

In summary, a major RAND study of contingency planning concluded that the United States was ill prepared for the kind of rapidly adaptive planning that might be critical in a large-scale crisis (i.e., a major regional crisis rather than something smaller that could be dealt with by the normal crisis-action process). Further, it concluded that the problems went far beyond operations planning, which has already been significantly improved through the efforts of General Powell particularly. The problems involve the longstanding disconnect among strategic, program, and operations planners, which has led to an overall system that does not value, much less assure, rapid adaptiveness of military capability. In the years ahead, as the United States scales down its military forces substantially, much of the adaptiveness that it has enjoyed as a by-product of a massive overall defense establishment may be lost. This makes it even more desirable that the defense planning be reformed to institutionalize planning for adaptiveness as an end in itself. The measures I have proposed would surely be radical in some respects, but in many respects they would seem only natural to American military officers, who prize and thrive on adaptiveness when the system allows it. Whether the Department of Defense will undertake such changes is not yet clear. Let us hope that the United States does not have to suffer a minor disaster (e.g., a crisis in which it was unable to adapt quickly enough to avoid a substantial loss) before it commits to the kinds of reform I have described here.
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Chapter 5

THE DISCIPLINE GAP AND OTHER REASONS FOR HUMILITY AND REALISM IN DEFENSE PLANNING

Kevin N. Lewis

The DoD budget is being reduced to levels unprecedented in modern experience. The plan for doing so is relatively specific and "right" in that it will demand a good deal of pain and leave the United States without much slack in its force structure; to avoid problems, it will be necessary to execute plans with great fidelity. As this paper demonstrates, however, the empirical history of DoD budgets over more than 40 years should encourage great humility on the part of planners. Not only could the actual program turn out to be significantly different from the plan, it almost certainly will turn out differently, in part because of a chronic and probably inevitable "discipline-gap" problem that makes it impossible to manage resources as efficiently as planners anticipate. Further, as funds are diverted to suboptimal uses (e.g., maintaining unneeded bases or imbalanced reserve components), U.S. fighting capabilities will erode even faster because of the nonlinear effects of treating too much overhead and infrastructure as "fixed." Consequently, programmed cuts may be dangerously deep—especially since historical experience indicates that we may be underestimating the true requirements for major regional and other contingencies. To mitigate such risks, defense planning should focus on the internals of DoD’s budget rather than its top line: major restructuring of resource allocation patterns could yield significant savings. In any case, the history of our defense budgets and posture shows strong evidence of organizational inertia in suspiciously constant allocations of budget among services and types of systems within services, all of which suggests that such rethinking, however difficult, is long overdue.

INTRODUCTION

The United States military establishment faces the most dramatic challenges since those confronted after World War II. Justifiably, planners and policymakers have attributed the need to reassess and revamp our defense posture and budgets to the devolution of the classical Soviet bloc military threat, but that explanation for the wrenching changes we now contemplate and debate tells only half the story. More subtle factors have also been at work. Evaluation of long-term trends—particularly of how we have allocated our national resources to national security and competing enterprises—suggests that
what we had come to accept as a "baseline" Cold War posture would not have been indefinitely sustainable in any case. Thus, the dramatic world changes forcing defense cutbacks are also requiring us to come to grips with issues that have long been suppressed or dealt with piecemeal.

The purpose of this essay, then, is to provide an overview historical analysis of these issues so that we can better understand the real issues that confront us now. To be sure, looking at the record of the last 40 years may be misleading, since it is possible that the future will be very different. However, there is reason to believe that the underlying causes for much of what I shall be describing are still very much at work. Thus, defense planners ignore the lessons of history at their peril.

Even at an overview level, we can draw some important conclusions from certain large-scale historical indicators:

- Based on our experience, it is a good bet that the defense posture we are planning to build and the one we will wind up building are probably going to be very different things.

- Historically, the budget has followed a characteristic but unpredictable cyclical boom-erode pattern that is partially tied to external events, but which has also come to be a self-replicating consequence of historical choices. This has considerable import for the future because our de facto "strategy" for modernization has been to rely on periodic budget booms. Now, however, no such boom appears on the horizon, and problems of block obsolescence will emerge early in the next century.

- There has been a steady convergent trend in budgets and posture: that is, the overall U.S. defense program has come to be quite structurally "patterned" in terms of the activities underwritten and the division of budget resources. Some of these features will inevitably be retained for good reason, but others merit serious review. The signs of costly organizational inertia are striking.

- As a result of political influences, externally generated demands, and organizational inertia, even if we had an agreed long-range defense program, the odds of seeing it through to fruition would be poor. For instance, we should expect to see nontrivial funding diverted to economically inefficient activities. This effect, which I call the discipline gap in planning, can have serious consequences. Historically, budgets and force levels were large enough to tolerate such inefficiencies. In the future, our vastly leaner posture and budget will tolerate them less well.

- The debate over future plans and strategies has been closely tied to the "front end" (combat-force portion) of the defense posture, but such force

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1The material in this paper is based on continuing internally sponsored RAND research on budget analysis. My book on the subject is in preparation.
structure accounts for a decreasing part of our defense budgets. Overhead—ranging from operational support for our major force elements to what we would call "true overhead and infrastructure" such as health care, basing structure, and administration—accounts for an ever larger share of the total budget. We need to get a better grip on such overhead activities, and though everyone agrees with this, there are some major conceptual and technical challenges involved.

- Over the course of the Cold War, we planned routinely for certain canonical major conflicts with the USSR and its allies (Davies, 1994b; Kugler, 1994). Instead, we found ourselves fighting other conflicts akin to what are now called major regional contingencies (MRCs). The historical record indicates that we consistently underestimated or misestimated the true requirements of these other contingencies. We coped, because we had a large and diverse posture generated by our planning for the Soviet threat; but now, because we will have smaller force reserves, our estimates of the requirements for MRCs must be correct. Unfortunately, there is reason to believe the traditional optimism about requirements continues.

All of this is highly germane to the present day because, on the one hand, the Clinton plan as described in the Bottom-Up Review (BUR) (Aspin, 1993) is deliberately "right," by which I mean that the planned force structure is considered to be adequate, but with very little slack.2 Because the Clinton plan is so tight, because history tells us that there will be significant differences between plans and actual programs due to congressional action and other factors, and because of the difficulty in reducing the "overhead" dimensions of our program, there is reason for concern. To summarize:

- History suggests that we may be underestimating the forces we will find it necessary to send to contingencies (or that will be tied down in various missions) and, at the same time, seriously overestimating the capabilities we will generate with our defense programs.

With this introduction, the paper proceeds as follows. First, I give an overview of the DoD budget over time, pointing out a number of lessons that can be learned from it. I then draw implications for current defense planning.

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2 Many authors have argued for deeper defense cuts, but the Bush and Clinton administrations came up with remarkably similar results, and President Clinton, in his State of the Union address, made clear his intention to avoid further cuts in defense. Office of Management and Budget director Leon Panetta discussed the tightness of the budget in "March of Bottom-Up Forces, Dollars is a 'Tight One,'" Defense Week, 8 February 1994, p. 1. See also Kugler (1993) for discussion of why the planned posture appears lean and why more severe problems are likely late in the decade and early in the next century.
HISTORY OF THE DoD BUDGET AND PROGRAM

Overview of Defense Spending

No other metric provides as useful a starting place for considering our defense planning experiences as the budget, but there are, alas, few analytic avenues more complex, winding, and, often, obscure. The reasons for this are basic flaws in what many consider the ideal planning model of the Cold War. Some of these flaws are that: (1) we are unlikely in peacetime to spend everything that prudent professional planners would consider necessary for "high-confidence" defense; (2) in any event, our programs turn out to produce much less than our plans envisioned; (3) it takes more time than expected to institute even agreed-upon changes; and, as a result, (4) the ultimate and most important choices we must make every year have to do with concerns that are elementally judgmental and more tactical than strategic.

Consider now a topline view of our budget history, as shown in Figure 1. Analysis of the details of this trace does much to explain the history of our Cold War experience.

Figure 1—History of DoD’s Total Obligational Authority

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3The data here are for the 051 account, direct DoD-authority. This omits certain non-Defense national security budget items, mainly spending by the AEC/DOE on nuclear weapons.
Probably the most significant feature of the data in Figure 1 is the \textit{cyclical nature} of the DoD total topline value, which is given here as total obligational authority (TOA) in FY93 dollars.\textsuperscript{4} We see, first, a rapid demobilization following World War II followed by an equally abrupt upward movement in the budget occasioned by numerous dramatic events occurring around 1950, the most important of which was the outbreak of the Korean War.\textsuperscript{5} Following that period of emergency response, the budget begins to drift downwards as a result of the Eisenhower administration’s “New Look” (or “Massive Retaliation”) strategy, which sought to use atomic weapons and other technologies to avoid the need for large and costly conventional forces to match the hordes of troops thought to be available to a unified Communist military juggernaut. Over time, the Eisenhower budget principle (known as the “Iron Law”) led to a gradual erosion in both defense budgets and the posture.\textsuperscript{6}

But doubts about the wisdom of heavy nuclear reliance as well as the impossibility of conventional defense with existing forces led to the formal adoption and implementation in the early 1960s of “Flexible Response.” This approach put on line a reasonably good combination of military capabilities of all types, which permitted the United States and its coalition partners to respond to potential aggression at an appropriate level (Kaufmann, 1982). In implementing this strategy, significant improvements in general-purpose capabilities were launched. These were made possible not only by some additional funding in the early 1960s, but also by the restructuring of various elements of the overall defense posture. As this restructuring proceeded, however, requirements for the conflict in Southeast Asia began to claim an ever larger slice of the total budget. After 1969, with the adoption of the Guam Doctrine and Vietnamization, war-related budget elements declined steadily.

\textsuperscript{4} TOA is an accounting concept unique to the Department of Defense: in most years it is very similar to the Budget Authority metric used in some documents, with the exception that TOA represents the value of all authority required to underwrite the defense program regardless of origins.

\textsuperscript{5} In addition to war requirements, however, the budget spike in the early 1950s reflects steps to implement the inchoate concept of containment. At the same time that units were rushed to Korea, for instance, four additional divisions were mobilized for deployment to Europe, and there was a dramatic acceleration in many modernization programs, including those strategic offensive and defensive forces required under the “New Look” policy.

\textsuperscript{6} Eisenhower’s Iron Law (a sort of predecessor of Gramm-Rudman) simply required that the sum of defense and nondefense programs be equal to total federal income. As the 1950s went on there was a major drawdown in many posture elements, although many of the forces concerned were “junk posture” for reasons of obsolescence or lack of readiness.
In the early-to-mid 1970s, we again see a steady process of budgetary erosion. Attention in planning then refocused on general conventional deterrence, particularly in Europe, but constant-dollar budgets resided in a historically low trough throughout the balance of the 1970s. The reader will recall that during this time, defense spending was strongly affected by general U.S. economic woes. The overall result has been described by some as a “decade of neglect.” A third major “boom” in defense budgets occurred in the early 1980s, which reflected a powerful (if transitory) popular perception that the U.S.-Soviet military balance had deteriorated to a dangerous degree. This perception was fueled by such shocks as the Teheran embassy takeover, the Soviet invasion of Afghanistan, and the Desert One fiasco. The result included remarkable gains in defense spending during the early years of the Reagan administration. Between FY80 and FY83, DoD TOA rose by 34 percent; subsequently, momentum continued to push authorizations to historically unprecedented levels until FY85, when DoD budgets reached an all-time post-Cold War peak of $362 billion in FY93 dollars (an increase above FY80 levels of 46 percent).

Once the budget reached that zenith, the historically typical process of erosion set in again. Given the political and economic climate of the time, it seemed highly likely that the downward part of the “boost-glide” pattern of defense budgets had kicked in, even though proposed DoD long-term plans continued to call for real increases until the FY89 budget (Lewis, 1990). To complete this brief account, note the effects on the budget of the remarkable developments transpiring between the mid-1980s and the present. Given that the defense budget had already entered a downward trajectory, it was inevitable

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7 This erosion of resource levels was, as we shall see, linked to a decline in many major force elements (both those generated for the Southeast Asian conflict and for some continuing ones). Reasons other than budget requirements account for some of these reductions, however. Among these were the arrival at the end of their scheduled service lives of a great block of World War II–vintage ships, and force reductions and restructuring undertaken in light of the shift to an all-volunteer force and the reorganization of the reserve components.

8 Some of the economic factors besetting defense planners during this time included severe inflation problems and rapid increases in the cost of some readiness accounts. It should be noted that some have disputed the term “decade of neglect,” arguing that in light of global requirements, the situation at the time was not so severe as has been made out subsequently. See Robert Komer, “What Decade of Neglect?” International Security, Fall 1985.

9 A report detailing a series of polls conducted by the Chicago Council on Foreign Relations (Reilly, 1987) indicated most clearly an abrupt—but highly short-lived—spike of national support for increased defense spending. For an account of the politics and certain other influences surrounding this odd moment in defense planning history, see Stockman (1986).
that the spectacular events of the late 1980s (including, one after the other, the cessation of Soviet depredations in Afghanistan and Nicaragua, the fall of the Berlin Wall and the collapse of the Warsaw Pact, and, finally, the fragmentation of the USSR itself) would combine with popular concerns about alternative domestic priorities to keep the defense budget line heading south. Not even the equally remarkable episodes of Desert Shield and Desert Storm and the coup attempt in Russia could deflect spending trends. As the Cold War approached its end, the key questions became how much further spending should fall and what size establishment the U.S. military should maintain.

Each and every development influencing the evolution of the DoD budget as a whole was, essentially, a "one-shot" affair. Indeed, many developments would have seemed preposterous to planners had they been sketched out before the fact. Certain consistent patterns nonetheless emerge from Figure 1. Most significant is the fact that the defense budget has been cyclical. Periodic budget booms—which, big or small, tend to be "event-driven" and are therefore unplanned and often specially focused—come along occasionally and push budgets up substantially. Thereafter, we find a typical extended period of gradual real-budget erosion—until another cycle kicks in. Figure 2 summarizes certain aspects of this history.

We see from Figure 2 that while the values of the defense budget over the entire period 1948–1993 ranged from $82 billion to $362 billion (Figure 1),
the budget generally oscillated more modestly around an average value of about $263 billion over the whole period in question. If we look at more modern data only, we see that average DoD TOA is the same for two intervals (FY62–93 and FY70–93).

Another way to consider the historical movement of the DoD topline is to look at year-to-year real growth rates as shown in the first line of Table 1. The average TOA growth rates in the various periods fluctuated from −3.5 percent up to 7 percent. If we exclude exceptional years with growth rates exceeding 5 percent, we get what in some respects is a better picture of (modal) normality (the last line of the table). Here we see that, with the exception of the early 1980s, the average growth in all periods was negative, with the overall average between FY56 and FY93 being a negative 2.1 percent. In viewing the history of the Cold War defense budget, then, we are seeing neither constancy nor anything like an unlimited "race to oblivion." Instead, we see a cyclic fluctuation around a reasonably intermediate mean, with most periods in fact being periods of slow erosion of the budget after short booms.

The DoD's Share of the Pie Over Time

No overview of budget history would be complete without making certain points about what the "burden" of the defense budget has and has not been. Figure 3 shows defense spending and employment as a component of various

Table 1

<table>
<thead>
<tr>
<th>Summary of Trends in Annual Real Budget Change Over Time, FY56–93</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Average Real Rate of Change During Epoch</td>
</tr>
<tr>
<td>TOA</td>
</tr>
<tr>
<td>Number of FYs of real TOA growth</td>
</tr>
<tr>
<td>3 of 6</td>
</tr>
<tr>
<td>FYs wherein real TOA growth &gt; 5%</td>
</tr>
<tr>
<td>2 of 6</td>
</tr>
<tr>
<td>Average TOA growth rate, excluding FYs &gt; 5%</td>
</tr>
<tr>
<td>−1.4%</td>
</tr>
</tbody>
</table>
larger national accounts.\textsuperscript{10} Here we see national defense spending as the following: a share of the federal budget as a whole, a fraction of net public spending, and a percentage of total gross domestic product (GDP).

Depending on what index we are using, we see that between the Korean and early “Massive Retaliation” period and the present, national defense falls by at least half of its proportional value, and sometimes by much more. The particularly substantial decline in national defense as a fraction of the federal budget and of net public spending reflects the dramatic growth over the past three decades or so in nondefense accounts, and especially in entitlements (Lewis, 1990).

Because so much of the total growth in federal budgets has taken the form of entitlements, national defense represents the lion’s share of the total that is defined as being “relatively controllable”—i.e., not tied to legislative requirements such as automatic inflation adjustment. This has meant, of course, that when deficit control becomes an issue, national defense reductions become particularly interesting to those seeking outlay cuts. Under the Clinton administration plan, the downward trend in defense as a share of the total federal or national effort is expected to continue.

The bottom line here is that while national defense has generally fluctuated within a particular envelope during the Cold War, the growth of government in general has driven it steadily downward as a component of the economy and of the total public sector effort overall. Comparing these numbers to those in Figure 1, we might form the impression that the question “What can we afford

\textsuperscript{10}Note that, unlike Figure 1, this chart is based on outlays, not authority, and it uses the broader “050” definition of national defense.
to spend on defense?” may not be very meaningful. The issue in defense budgeting is not really one of ability—we can and have spent what at the time the political consensus thought fit for security—but rather one of will. That is, administrations generally tend to try to hold the line on defense cuts. However, the overall process includes enough adjustments so that the net result in most years is modest real decline. But when explicit exogenous circumstances have so demanded, or when perceptions of threat or an ailing military balance prevailed, the nation has ponied up whatever resources were needed.

Not only does historical experience tend to dilute the significance of the question of whether we can afford a given level of defense spending, it also casts some doubts on the image of top-down planning as laid out in some of the models of how defense planning should work (i.e., models that assume we decide objectives and strategy, build a sensible multiyear program and budget, and then implement it). How much we spend on defense is a function of two things above all others: the existing size of the defense establishment, and the political context in which an annual budget is formalized. Further, as we shall see, the majority of the defense budget does not go into direct-combatant accounts. When we ask the question “How much is enough?” we are implicitly talking about capabilities—how many forces, of what kinds, configured and employed in what ways, etc.—might be required to meet the contingencies that we may face. But, depending on how one does the accounting, only something like 20–35 percent or so of the total budget directly supports those combat forces that figure so much in our public debate. Put in an admittedly extreme way, it would be possible to zero out all components of our defense posture actually able to engage potential enemies and still have a defense budget well over $100 or even $150 billion a year (depending on how this absurdity were to be managed). Before continuing with this point, however, let us briefly touch on a few last points about the defense budget as a total entity.

Planning “Failures”: The Gap Between Projected and Actual Outcomes

Let us now begin to examine the empirical evidence for the assertions made at the outset of the paper. Let us look first for evidence of how well official plans have fared—i.e., how closely actual programs and spending approxi-
mated expectations. What we find is that, almost universally, budget plans have postulated modest rates of year-to-year changes and, except for some recent years, upward changes. When we compare the plans that have been sent to Congress each year as required by law with the actual experience in the subsequent program period (i.e., what Congress authorized), we see a rather startlingly dramatic disconnect. What happens has routinely not been what was “expected” to happen.

This is apparent in Figure 4, which compares the gap between the projected total value (in constant dollars) of historical five-year defense plans (FYDPs) and the value of the total DoD budgets for those five years as they actually played out for those years for which all data are available. A negative value in this portrayal means that the total defense budget for a given five-year period fell short of what had been forecast for these five years in a given plan. A positive value means that more TOA was available than had been expected at one time. Many factors account for the great variation in the “fates” of each plan: some are somewhat technical in nature (e.g., part of some of the variation is explained by errors in economic forecasts), but the bulk of the gap results from the effects of the larger political process. For instance, plans in the mid-1970s proposed a gradual rebuilding of defense, an expectation that was not realized in actual experience. But the consequences of the “unplanned” dramatic buildup of the early and mid-1980s led to a trove of unexpected resources. Ignoring the inevitable process of cyclicality, budgets for the mid-1980s continued for a while to anticipate significant real growth, even as the DoD topline began to head south—thus the gap between plans and expectations began to shift in the other direction. The real point of Figure 4 is that our planning process as a whole does not seem very clairvoyant, to say the least. Programs have turned out quite differently than planned. This has been true at the microscopic level also. Tables 2 and 3 illustrate this with Air Force systems, but similar data exist for the Navy and Army. As we see in the two tables, actual procurements of bombers and fighter-attack aircraft have sometimes been greatly different from those planned. In other periods, the discrepancies have been in the other direction, with procurement greatly exceeding original plans (e.g., when the Air Force procured 1985 F-16s through FY92 rather than the total of 650 planned as of FY76).

**Four Lessons from History**

Four lessons lurk in the data about DoD topline budget histories. First, there will usually be steady pressures tending to produce a mild erosion in DoD’s budget, even under rather routine circumstances. Second, while many administrations have developed plans calling for a steady-state budget (or slow
but steady growth), the eventual budgets have been quite different. Seen in this context, we must doubt the validity of the Clinton administration's projected force posture as described in the BUR (Aspin, 1993), which forecasts a fairly steady rate of decline and, presumably, the ultimate stabilization of the budget at some future point (see also Kugler, 1993).
Table 3

<table>
<thead>
<tr>
<th></th>
<th>Plan FY62</th>
<th>Actual FY70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-range attack</td>
<td>17.8</td>
<td>3.3</td>
</tr>
<tr>
<td>Air superiority</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Multirole fighters</td>
<td>6.6</td>
<td>25.2</td>
</tr>
<tr>
<td>Attack</td>
<td>0.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Total tactical air force</td>
<td>25.4</td>
<td>31.7</td>
</tr>
<tr>
<td>Tactical photo-rece</td>
<td>6.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Air defense fighters</td>
<td>15.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Grand total</td>
<td>47.1</td>
<td>47.1</td>
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</tbody>
</table>

The third lesson will become clearer in what follows and is related to the failures to implement steady-state or steady-change budget plans; it is that historical events such as real or perceived crises cause various initiatives that produce self-perpetuating budget requirements. This is especially true in our major end-item procurement accounts. During years of budget plenty, we might, for instance, procure large numbers of fighter planes. But these systems will subsequently reach the end of their service lives at the same time, producing a requirement for a major investment initiative to prevent block inventory obsolescence. On the other side of the coin, during periods of relative austerity we may defer procurement of all kinds of systems, from major front-line weapons to trucks and radios. We employ a great many techniques to keep systems of all types running if they cannot be replaced on an ideal timetable, but there are always limits to this approach. Eventually, we must make good on our deferred investment (usually during the “next” budget boom)—at which time we are often made to pay for our deferral decision when we must procure items at less-than-ideal production rates.

The last of the four lessons is that defense budget totals are by no means the outcome of anything approximating an orderly process of planning based on commitments, requirements, threats, or contingencies.

A general warning begins to emerge from even the most cursory analysis of this pertinent history. At first glance, it appears that the Clinton administration’s plan (and that of its predecessor) is underfunded, has little slack, and is unlikely to produce the kinds of minimum capabilities sought by its underlying strategy unless we enjoy a historically unprecedented level of discipline and control. Further, if our plans about what capabilities are required are wrong, the resulting situation becomes that much more precarious.
OBSERVATIONS ON THE INTERNAL STRUCTURE OF THE DEFENSE BUDGET

So far we have seen that the history of the defense budget has been complex. Equally complex has been the allocation of resources within the defense budget. There are particular unique dynamics within the defense budget that have some implications for our future planning efforts. After all, the specific decisions we make about development efforts, operational tempos, acquisition, personnel policies, etc., reflect in the most tangible way the interplay between contemporary management concerns and the perceptions of those involved in internal budget allocation of the priorities, risks, and so on that should most strongly influence our choices. Internal DoD budget allocation, in short, is where "the rubber meets the road" in defense policy, though the topic, for a variety of reasons, is often neglected by students of strategy and defense planning.

A full analysis of internal DoD budget allocation issues and trends could fill an encyclopedia, so I will limit my remarks here to a few of the more salient matters of interest to defense planners. I will comment on:

- The general tendency toward stability (or convergence) in budget accounts over time.
- The emphasis on investment (and especially procurement) during upward movements of the DoD topline.
- Shifts in the representation, within the budget, among "functional accounts." There has been a gradual shift away from the "front end" of our force structure toward (1) what we might call a combat "support" account (consisting of capabilities that support or contribute to the activities of "front end" forces) and (2) more traditionally defined "overhead" such as health care, quality of life, and maintenance of physical infrastructure.

Convergence Within Major Budget Accounts

To illustrate what I mean by "convergence," Figure 5 shows the percentage of TOA allocated to the various military services over time (the difference between the sum of the shares and 100 percent is due to expenditures on defensewide and OSD/OJCS activities such as military retired pay).\footnote{The data given in this chart are based on total service toplines as a share of DoD TOA. It should be noted that over the period in question, there are, however, some shifts in the way that certain overhead accounting is done (among other things) that have introduced certain biases into this figure. For instance, as of FY84, retired pay for military personnel was moved out of a DoD-wide overhead account into the budgets of the services. Most of the adjustments in question involve such shifts; but a few involve}
studying Figure 5, we can, for instance, see a decline in the Air Force share of the budget in the early years as the defense establishment moved away from a strategic-oriented “Massive Retaliation” posture and toward one better configured for the doctrine of “Flexible Response” with a significant component of initial conventional defense. During the Vietnam years, the Army share grew somewhat because that service expanded its personnel needs and, to a lesser extent, because it pursued ABM capability.

What is interesting about this chart is how the relative service shares fell into a fairly consistent ratio over time. Given the many major developments transpiring over this historical epoch, the result is surprising. Indeed, the stability is even projected into the future under the Clinton plan. The same sorts of consistency can be seen in other major accounts (when adjusted for particular developments, accounting changes, etc.). We are entitled to ask why the force toward stability (i.e., toward convergence) in budget shares should be so strong. On its face, Figure 5 would seem to be very strong evidence of organizational inertia rather than optimal planning, since about 1970.

the movement of funds from service accounts to centralized ones. The amounts involved are not that large relative to the total quantities in question, but they are significant enough to explain some movement in the lines in Figure 5. For our purposes, however, it suffices to note that the effects produced are systematic—they affect all the services proportionally—even while certain longitudinal inconsistencies result.
The phenomenon also occurs at the level of force structure, as Figure 6 indicates for a large-scale metric, major force elements of the Army, Navy, and Air Force and as Figure 7 indicates for a more refined indicator, i.e., inventory representation of different types of Air Force aircraft. In these and other cases, the degree of convergence since about 1970 is significant. We could draw any number of charts at all levels of detail and would find that a surprising number match this convergent pattern: a result we might not suspect in light of the size of shifts in budgets, requirements, etc. over the periods of interest.

There is, of course, no single and fully satisfactory answer for the convergence phenomenon in either budget shares or force structure. A student of bureaucratic politics might argue that relatively constant service shares reflect the outcome of a continuing tight competition among services and their supporters in Congress. Another explanation flows from the inertial properties of the budget. The DoD budget is so complex, and supports so many continuing activities, that major shifts in emphasis are hard to accomplish in the short run and then sustain—unless some major, defense-wide realignment of basic planning principles has been undertaken (as was the case with the shift from a nuclear-
oriented posture to a flexible response posture in the early 1960s.\textsuperscript{13} It is possible, of course, that the near-constant shares are the best allocation. That would seem to be remarkably fortuitous, however.

Whatever the reasons for approximate stability in major service shares (and stability within service budgets as indicated by Figure 7), the key point for our purpose is that these stabilities exist.\textsuperscript{14} Such relative constants bespeak a pattern, and we would be wise to presume that the patterns will endure unless overwhelming evidence to the contrary can be brought forth (e.g., decisions

\textsuperscript{13}Relevant here is the fact that the annual "defense budget debate" has really addressed only a fairly modest percentage of the total defense budget. That is, if one is committed to a posture of a given size, and to given levels of support and infrastructure, and when one takes into account the consequences of decisions already made, program momentum, etc., the total financial consequence of all DoD and congressional decisions in any one year will be relatively small compared to the size of the budget that rolls along in predictable fashion. Long-term stability of budget shares simply means that the cumulative net effects of these marginal decisions zero out.

\textsuperscript{14}Note that the approximate stability I refer to here is for the part of the budget not taken up by nonservice DoD budget elements. The sum of the service shares in Figure 6 has shrunk over time as DoD-wide activities have increased.
explicitly and substantially changing the shares). In fact, the Bush and Clinton administrations have not obviously made any such large-scale shifts.

**Topline DoD Budget Cycles and Internal Budget Mixes**

A second major finding of an analysis of internal DoD budget trends relates to the cyclical property of budget toplines discussed above. If so many aspects of the internal DoD budget tend to stay relatively constant over time, then what happens inside the budget when one of the relatively few major budget booms takes place? The answer to this question is complicated greatly by the unique traits of each of the major buildup and falloff cycles. But one feature underlies the cyclical topline pattern over the entire historical interval examined, and it has major consequences for our future planning. That feature involves what we might term episodic surges of investment funding, especially spending for development and procurement of major weapon end-items, during major budget buildups. To be sure, some buildups are associated with combat actions, and so a considerable amount of any buildup might go for war-related consumption or the operational and personnel costs of increased force structure. But in every case, we typically see a surge in procurement during a major budget buildup; and when the buildup ends, we typically see that procurement falls off the fastest.

Figure 8 plots, using constant-dollar TOA data, procurement and “all other” accounts for the last two buildups (i.e., the period FY62–FY92), showing each as a fraction of the respective value in 1975, the bottoming-out point for DoD’s TOA after the post-Vietnam drawdown. We see, from both the rates of increase in these ratios and their absolute size, that procurement is far more volatile than the balance of the DoD budget as the budget grows and contracts. That is, when the budget rises, procurement tends to grow faster than anything else, and when it falls off after a buildup, procurement is, relatively speaking, the big loser.

This phenomenon of procurement volatility is of particular note at the present time when we consider two factors: the duration and amount of procurement spending programmed over the current planning cycle. We can easily see that there is a historical tendency to do a relatively great amount of weapons buying during buildup periods. We then “live off” that investment until the next procurement upswing, at which point we attempt to refresh as much of the inventory as possible. This tendency arose initially as a consequence of circumstance (e.g., no one planned the Korean War or its associated buildup), but once we became ensnared in this cyclical pattern, it became institutionalized. Since we have made a lot of purchases all at once, it follows that a lot of our inventory items may reach the end of their service lifetimes
Figure 8—Procurement Volatility

simultaneously, creating a requirement for another major procurement initiative. In the past, historical events have provided the necessary boom.

To illustrate how this boom-erode cycle works at the micro level, let me simplify greatly a complex distinction between those force elements that constitute what I call the "core" of a service's force structure and those that I shall call "noncore" force elements. They are noncore because we have procured them mainly during discrete intervals during which there was a pressing need: they would not necessarily have been acquired otherwise. The concept of noncore procurement is best explained anecdotally. For the Air Force, one component of core posture has been a diverse array of fighter-attack aircraft. Plans for future procurement, and ongoing development efforts, continually program initiatives for the modernization of these forces no matter what the status of budget levels may be. But periodically, demands for the acquisition of ancillary posture elements (the noncore elements) have arisen.

For instance, the requirements of the air war in Vietnam produced a brand new demand for various kinds of specialized combat and combat support aircraft. These forces were expeditiously acquired; often, they were put on line by unconventional means. The total special operations and air rescue force

15 There are, obviously, exceptions to this rule—we do buy weapons for some force elements during periods of relative budget austerity.

16 Including combat search and rescue, psychological operations forces, various sensor and targeting systems, defense suppression forces, aerial gunships, and so on.

17 Consider, for instance, the modification of several types of transports for gunships and other exotic purposes, the reactivation of retired A-1s for service with the U.S. and Vietnamese air forces in combat roles, and the Air Force's adaptation of some Navy helicopters for analogous usage.
in Southeast Asia grew to enormous size: around 1969, the Air Force fielded more than 400 SOF/Air Rescues and Recovery-type aircraft in theater. After the war, many of these types were retired, but others were retained or gave rise to more modern successors. Thus, such types of aircraft (which are in the force today in such forms as the AC-130 or HH-60) fall into the category of noncore force structure because their entry into the posture was brought about not as a result of routine posture-planning activities but of some other influence. The reason that I introduce the notion of noncore procurement is that the entry (and modernization) of this type of force structure is associated with major budget buildups. This is so for two main reasons: (1) the budget buildup is associated with some actual contingency that gives rise to specific “real world” requirements for such capabilities; and (2) the budget buildup provides enough funding so that options beyond rehabilitation and modernization of core posture can be entertained.

The importance of these noncore force and budget intervals to our total posture can be illustrated by considering the case of various Navy combatant ships. There is no arguing the question that both surface combatants and submarines should be considered “core” Navy fleet posture elements. On the other hand, some people might note that the Navy has tended to pay relatively less attention to certain other types of ships, such as amphibious-lift or mine-warfare vessels. Figure 9 shows the total numbers of each type for various historical intervals associated with periods of relative budget plenty or austerity.  

Consider now the significance for future budget planning. Two things in particular are strongly suggested by these data: (1) that by projecting a continuing decline out through the entirety of the planning period, the Clinton administration’s plan departs substantially from historical trends insofar as investment cycles are concerned; and (2) that the notion of a continuing stable budget profile extending beyond the end of the current planning period—a pattern the administration’s plan seems to imply—is probably not feasible (barring an abandonment of current U.S. strategic concepts and, most likely, our status as a global military superpower)(see also Kugler, 1993). Let us consider each point briefly.

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18This figure omits craft, boats, military assistance procurement, certain experimental types, and conversions. The large numbers of noncore-type ships procured in the last two bars in the chart can be attributed to the acquisition then of various small mine-warfare ships that had slipped from their procurement schedules earlier in the decade on account of various programmatic and technical problems (such as the outright failure of the Cardinal class).
Figure 9—Acquisition of Core Versus Noncore Force Structure: The Case of Navy General-Purpose-Forces Ships

First, it is interesting to note that even as the Berlin Wall fell, and even as Desert Shield and Storm unfolded, the defense budget not only continued to decline, it did so more or less “on schedule.” We noted above that when DoD budgets fall, procurement is hit particularly hard. Figure 10 shows the declines of total DoD budget and procurement for both the post-Vietnam buildup and the present one. Each expenditure is shown, not in absolute terms, but as a percentage of its level in the highest year of each budget buildup. It is interesting to note that, compared with the post-Vietnam buildup, the current one has been more gradual.¹⁹ This fact we owe to a constellation of political developments. In particular, the concept of the Base Force (in concert with the “Rose Garden” budget agreement) played an essential role in preventing the defense drawdown from becoming a rout during the Bush years.²⁰ However

¹⁹The starting point for the recent decline was appreciably higher than earlier (see Figure 1). Furthermore, unlike the case for the Vietnam-related budget bulge, we did not in the 1980s experience the massive diversion of materiel (whether by consumption in combat operations or in the form of military assistance handouts). On the other hand, the force structure and materiel items financed by the 1980s buildup are generally more expensive on a unit basis.

²⁰Senior defense leaders from several administrations deserve the great thanks of the American people for their clever and determined efforts in preventing the gradual draw-
that may be, in contrast to the post-Vietnam decline, which turned around in FY75, the current drawdown is expected to endure through the end of the century (for a total duration through FY99 of an unprecedented 14 years). By that time, authority will have fallen well through the nadir of the post-Vietnam decline in both real and proportional terms.

As we saw in Figure 8, intervals of extended restrained investment between upward procurement cycles have never remained so low for so long as current plans envision. To some degree, the effects of this extended period of

![Graph showing drawdown rates after Vietnam and after the Cold War.]

NOTE: All figures are TOA figures, in constant dollars, divided by base-year figures, either 1998 or 1985.

Figure 10—Drawdown Rates After Vietnam and After the Cold War

down following FY85 from becoming a chaotic unravelling. Secretaries Carlucci and Aspin did their parts; special mention is due Secretary Cheney. If it served no other purpose, the “Base Force” concept, laid out originally under the guidance of JCS Chairman Colin Powell, also played a key role in making sure that the ongoing build-down stayed orderly.
"disinvestment" are mitigated by the fact that the remaining force structure is planned to be smaller. This fact allows us to postpone some modernization initiatives and to pursue others in less grand scale. The specifics of future modernization and replacement problems vary on a case-by-case basis (Stanley, 1994), but it is possible to produce detailed estimates of future capitalization needs by determining what equipment needs a smaller force would have (given that we would presumably have discarded older systems when possible) for selected assumptions about the service life of remaining force constituents, options for life extension, etc. Even for a smaller posture, most such analyses show some demand for some kind of procurement effort to parallel (albeit on a more modest and hopefully better-managed basis) the previous procurement cycle for that kind of system. Almost all of these procurement/replacement "requirements" lie after the last year in the current plan, FY99, some just after it (Kugler, 1993). Major problems potentially lurk, of course, when several major replacement demands stack up on top of each other. These problems will also be complicated if any new investment requirements (say, in the form of a theater antimissile system) are added to the replacement program for our mainline posture. Further aggravating the situation will be the fact that the unit prices of our major force components are increasing (in line with their increased performance and capabilities, the requirements placed upon them, reduced production quantities, etc.).

This brings us to the second problem cited above, namely the notion that the budget somehow could fall to some point or other (according to the Clinton plan, something in the vicinity of $220 billion) and then reside there more or less indefinitely. History doesn't support this interpretation. Nor do the numbers (i.e., the numbers indicating systems that must eventually be replaced as they become obsolescent). It will be imperative at some future point to make one of two decisions: either approve a new cycle of upward defense budget movement with a special emphasis on recapitalizing our forces, or accept a marked reduction in our force structure and a shift in our basic strategy to go with it. Since we are already at what the administration has called a "minimum" force level for a baseline global power strategy, that would seem to imply that we would at that point have to abandon any pretense of remaining a classic global superpower. Further, the longer we postpone that decision, the more "catch-up ball" we will have to play—and the more of that game we play, the more inefficiencies we will court in our production programs. It would be better to smooth out the amplitudes of the cyclical investment curves (Stanley, 1994). And the longer we must await increased investment spending, the more trouble we will experience as we struggle to keep an ever more elderly posture functional in both operationally and logistically meaningful ways. On top of this, we must remember that not only investment accounts but other budget components will be increasing in real terms on a unit basis. There is no reason
to suspect, in other words, that health, retirement, quality of life, and other personnel and operational costs will somehow lag inflation rather than exceed it as they have done in the past. This will place further pressures on any future effort to fund a core posture.21

In short, the notion of the budget somehow coming to rest at some steady-state level flies in the face of our historical experience. We are, as we look to the years and even decades ahead, the prisoners of our past choices.

**Historical Assessment of Functional Budget Categories.**

As a last piece of our look at the internal DoD budget over time, let us examine what may be, from a managerial point of view, the most important issue we may face over the short run: balancing properly the future defense establishment among what I here describe as *functional* categories.22 By “functional,” I have in mind a distinction among major budget components according to the role they play with respect to the fielding of major operational combat capabilities. Policymakers have always been interested in this topic under a variety of guises. For instance, concern has often been expressed about the “tooth-to-tail ratio” within the defense establishment as a whole—whether we might be spending too much on the “tail” (i.e., the supporting structure and infrastructure upon which the defense effort as a whole relies) and too little on the “tooth” (the actual front-end combat capabilities). The issue has gained particular currency over the past few years as force structure levels have repeatedly been cut to meet budget targets. Fearing that cuts beyond minimal levels of necessary capability might occur, particular emphasis has been placed on the reduction of a number of infrastructure and overhead accounts—for instance, the closure of bases no longer required given the new strategic context and a smaller overall posture.

One unfortunate aspect of the recent cuts and plans developed has been that our understanding about just how to go about thinning down “overhead” in general is not well informed by solid analytic methods and other assessments. Another problem derives from the politics of certain overhead reductions. Issues surrounding, say, the closure of certain installations or the standing down of certain reserve activities are well known to any seasoned defense man-

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21 Secretary Perry has stressed the importance of basic R&D initiatives: presumably by the end of the decade some of these will have moved along to the point that they will generate options for major investment if we are to exploit any gains made.

22I mean “functional” only in a general sense. While some elements of the DoD program fit logically into one category or another, others are harder to assign. I have used one allocation methodology; others would yield different absolute numbers, but for sensible categorizations, the overall trends would be similar.
ager to be among the most sensitive possible, given the resistance of many political constituencies to such efficiency measures. An additional problem has to do with the technical aspects of these economy initiatives themselves. For instance, closing a certain military base might actually involve more costs than savings in the short run, on account of various factors (e.g., the environmental restoration of the base, the provision of assistance to the local affected economy, etc.).

A final—and perhaps the most important—problem with going after "overhead" (however one elects to define that) has to do with the nonlinear nature of the relationship between the purpose of that overhead and its size. We can relatively easily adjust many front-end force elements on the margin: reduce the number of aircraft assigned to our tactical squadrons, trim personnel in battalions (or cut battalions from divisions), etc. But downsizing infrastructure often involves some precarious step-function and other discontinuous phenomena. To take a deliberately extreme case, consider, for instance, the Global Positioning System (GPS) navigational satellite system. This resource, an undeniably important part of our defense overhead (both literally and figuratively), can function only with a minimum constellation of satellites in place: we cannot trim the system by 10 percent (say) without undermining the capabilities of the whole program. Such complex relationships between the "inputs" and "outputs" of many overhead elements are common, and they represent a real problem for planners charged with trimming budgets to meet year-to-year outlay targets.

As a result of these difficulties—both in understanding the problem and in implementing solutions—and because the DoD has traditionally tied its justification for military forces to specific (and now waning) military threats, the force structure itself has been the primary target in budget cuts to date. Indeed, for unclear reasons, a kind of direct relationship between budgets and force structures seems to exist in the minds of many. Because of this targeting of force structure in successive rounds of budget cuts so far, we see disproportionately large reductions in the "tooth" parts of our posture compared with the relative drop in budget levels proposed.

To illustrate this, Table 4 and Figure 11 show how the number of Marine fighting units (battalions and squadrons) drops as a function of reductions in personnel. The figures are for three different proposed budget levels (and have not yet been updated for the results of the BUR). It is hard to break out specific budget figures for the Marines as an integrated force, since the Navy procures many items used by the Marines and provides some personnel support to Marine formations, but Marine personnel is a fair surrogate for budget, and we see that combat structure is dropping twice as fast as personnel (and roughly twice as fast as dollars).
Table 4
Consequences for Fighting Units of Cuts in Marine Budget

<table>
<thead>
<tr>
<th>Force element</th>
<th>FY89</th>
<th>FY92</th>
<th>FY95 (planned)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total personnel</td>
<td>197,000</td>
<td>188,000</td>
<td>159,000</td>
</tr>
<tr>
<td>Rifle battalions</td>
<td>27</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>Fighter-attack squadrons</td>
<td>28</td>
<td>23</td>
<td>17*3(^b)</td>
</tr>
<tr>
<td>Decline (percent) from 1989 baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel</td>
<td>5</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Battalions</td>
<td>11</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Squadrons</td>
<td>12</td>
<td>39 (29)(^c)</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)USMC end-strength subsequently revised upward by BUR to 171,000.

\(^b\)Three squadrons programmed under BUR as "dual" squadrons.

\(^c\)Including dual squadrons.

Figure 11—Combat Capability Decreases Twice as Fast as Personnel Levels
(Proxy for budget levels)

The reasons for this peculiar relationship are tied to several factors, one of which is the nature of the Marine personnel infrastructure base. Given hard-to-cut baseline requirements for a training base and other functions (e.g., pro-
viding embassy and ship security details, headquarters staffs, etc.), cuts can only be taken from active combat units themselves. Similar charts could be drawn for other elements of other services. The ultimate result of such a process, of course, is the absurd situation in which the United States maintains a given basing structure, communications and intelligence system, headquarters and training bases, and a whole array of other support assets—but has in hand no usable combat forces.

Defining infrastructure—never mind assessing its payoff—is a complex and tricky task. We are confronted with a basic problem about the difference between what we have traditionally defined as the “combatant” part of our posture and the nature of what is left over. But not all relative growth in “overhead” in general is necessarily bad: one very favorable outcome of our years of experience and technical developments has been our ability to devise a series of support assets, “force multipliers,” and other capabilities that we might not tally in our “bean count” assessments of the military balance but which without doubt enhance in an immediate way the ability of our “shooters” to do their jobs in operational settings. For example, one of the major accomplishments of the U.S. Air Force in the years between Vietnam and Desert Storm has been the development of numerous electronic warfare systems, control, targeting, and intelligence systems, defense suppression capabilities, and the like, all of which enabled allied air power in the Gulf War to score enormous successes against Iraqi forces with unbelievably low attrition. Similarly, our abilities to transport major force elements rapidly by air or sea, to refuel an entire range of aircraft in flight, to surveil and communicate on a global and an instantaneous basis, etc., are without any doubt the capabilities that make the United States a true military superpower. Sometimes, the tail does seem to wag the dog.

But it continues to be difficult to say what tradeoffs should be considered between, say, a certain number of extra JSTARS targeting aircraft and a given number of tactical fighter-bombers. It is even harder to conceive in traditional cost-benefit terms of what we should spend on logistical support and high-quality training. What is possible, however, is to consider certain trends in our budgetary allocations among a spectrum of capabilities ranging from pure combatant elements on the one hand (wings, divisions, surface combatants, etc.) to pure infrastructure and overhead costs on the other (retired pay, health care, base maintenance, etc.). One way of conceiving of the problem divides the total defense budget into five categories, as follows:

- **Combat forces**—the “teeth” of the posture. This category includes all accounts associated with the direct operating, manning, and equipping of those force structure elements that most people think of as our basic military posture (like numbers of divisions, fighter wings, bombers, carriers, submarines,
etc.) as well as certain other units (such as special operations forces, strategic defense units, antisubmarine warfare surveillance and defense forces, etc.).

- **Capabilities for supporting and sustaining combat forces.** This is a quite varied category that includes such diverse activities as logistical support, procurement of war reserve spares, the development of new technologies for possible future employment in combat weapon systems, mobility resources, and so on.

- **Defense operational infrastructure.** This collection of activities refers not so much to specific units and direct support functions as it does to command, service, and defense-wide activities like communications, recruiting and training, medical and related personnel support, and the like.

- **Defense physical infrastructure.** This category consists, as the reader would suspect, of the activities normally thought of as “bases and installations”—it also includes pertinent military construction and family housing accounts, the maintenance of test and training ranges, etc.

- **Central defense management, command, and related accounts.** This is the costs of headquarters and administration, plus various other endeavors—support of diplomatic and foreign military activities, undifferentiated (basic) R&D, and other odds and ends.

This scheme is just one of the many that could be devised, but it has the virtue of having relatively few categories so that we can see rather simply the large-scale movement in and among them. Let us now turn to the results of a longitudinal investigation of the data appearing in this portrayal. But before proceeding, it is important to note that the descriptions of the composition of each category are deliberately not more precise—because the point of this discussion is not to dispute how to divide up the categories but rather to simply display the results of one research approach to assessing them. I have investigated other approaches, and the results are entirely in agreement with those I give here.

Figure 12 shows the DoD (in TOA) broken out into the preceding five categories on a percentage basis over the period FY62–92. The movement over time in each category and the interactions among them are a consequence of many factors, some of them highly complicated ones. But two factors that are particularly important are: (1) correspondence of certain phenomena in these statistics to various large-scale (topline, appropriation title, etc.) developments; and (2) certain longer-term trends. For instance, the category describing our combat forces is rather sensitive to procurement of these systems—hence this category shows an increase during the buildup of the 1980s (when many costly weapons end-items were procured). At the same time (taking into account this bulge), we note a general process of decline over time in the share represented in the budget by this category from the high 30 percent range to the high 20s
Figure 12—Breakdown By Components of TOA, FY62–FY92

during the so-called decade of neglect (a level that is reattained at the end of this period as the 1980s procurement buildup faded out).

It is worth highlighting some findings from the chart and thoughts about the Clinton program:

- Certain categories—management and command, physical infrastructure, and combat force support—tend to stay relatively constant over the course of the whole interval. These categories stay, respectively, within the following general proportional ranges: 11–15, 18–20, and 10–12 percent. Closer analysis of the data underlying this figure indicates some mixing among the constituent elements of these categories, but in general, their effects balance out over time.

- Ruling out the major procurement of weapons of the 1980s, operational support has gained over time “at the expense,” if you will, of front-line combat forces.\(^{23}\)

\(^{23}\)This phenomenon reflects the drawdown and rationalization of the force structure associated with the shift to Flexible Response (influenced, of course, by Vietnam War developments). Note that detailed analysis of the factors contributing to overall movement in the absolute or proportional constitution of these categories reflects a general process of decline in front-end “core” posture representation in the budget and corresponding gain in certain ancillary posture elements (recently, these include, for instance, special operations forces). Of even greater significance has been the steady if not entirely regular growth as a share of the budget in communications, intelligence, and related resources.
Because (a) very little combat system procurement is programmed for the balance of the decade, (b) force structure has declined and is programmed to decline further, and (c) there have been no corresponding reductions in certain support undertakings, we should see, through the rest of the 1990s, a considerable decline in the “tooth” part of the posture and a proportional growth in other accounts, especially those related to defense operational support.

This demonstrates several factors of note. First, the general process of patterning (in the form of “convergence”) is apparent in this portrayal, as well as in others. Second, the general movement over time away from a budgetary emphasis on front-end combat units toward various supporting programs (particularly operational support) is clear from this chart, and we should expect to see this phenomenon amplified greatly as a result of the Clinton administration’s plans for the future (and those of Bush’s before them). Force structure has been targeted especially heavily (and, of the constituent force accounts, procurement of major force elements has in particular been heavily hit) for a number of reasons: these accounts are understandable to policymakers; they are often controversial; they are associated in the public eye with strategy; and so on. Third, while we may retain too many bases and other physical infrastructure, and while there is a continual drive afoot to streamline managerial and command “overhead,” the greatest internal budget cost pressures are not in these categories but rather in two main areas: (a) those related to personnel costs (the same problems the domestic economy has experienced with, among other things, health care costs have hit the military just as hard); and (b) those related to command, communications, intelligence, etc. The significance of these findings for our consideration of our future defense prospects has not, in my view, been adequately considered. In particular, we run the risk—if budgets continue to decline and if various effects produce a year-to-year demand for continued program trimming—that we will continue to take cuts from posture and not from certain overhead accounts.

24 Indeed, as of a couple of years ago, more than a sixth of the defense budget took the form of entitlements—health care, retirement benefits, support of dependents, etc.

25 This should be apparent to anyone who has followed our recent operational experience. An inevitable “lesson learned” from every recent operation, from Urgent Fury to Just Cause and to Desert Storm, has been “the need for more and better communications and intelligence.” There seems, indeed, to be an almost unlimited demand for such resources. While this demand is no doubt justified from many perspectives, it does not seem to be much corresponding concern with tradeoffs—if we take the force versus budget competition to an extreme, for instance, we wind up with a completely ineffectual but extremely well-informed spectating military posture.
ARE WE ALSO UNDERESTIMATING REQUIREMENTS?

So far in this overview I have sought to persuade the reader that there is every reason to believe we will end up with a good deal less combat capability than our current plans project. But does it matter? What are our needs? This is not the place to discuss this in any detail (see also Davis, 1994b and Kugler, 1993). Let me instead note that both the Bush and Clinton administrations came to very similar conclusions about the appropriate minimum size of the defense establishment, despite having come in with rather different attitudes on the subject. Further, current planning revolves around major regional contingencies and posits the adequacy of force levels substantially lower than those we have routinely sent to analogous contingencies in the past. As Figure 13 indicates, there has been a remarkable consistency in MRC commitments—at levels significantly above the “building block” that the BUR associates with an MRC (4–5 Army divisions, 1–2 Marine divisions, 4–5 carriers, and 10 wings). And while some cynics will say that this merely reflects organizational behavior or gamesmanship rather than needs, it did not seem at all unreasonable to General Schwarzkopf to ask for a doubling of the Desert Storm force before beginning a massive counteroffensive. While it is not provable, it seems to me

Figure 13—Forces Committed in Korea, Vietnam, and the Gulf War
plausible that the two most recent administrations have been correct and that
the present defense program is moving us toward minimally adequate capabili-
ties. If this is so, then we should be concerned, because the likelihood of the
program’s turning out to be as effective as the plans call for is small. Let me
end, then, by again urging humility upon our defense planners. We should
not be “betting the ranch” on the current plans being implemented efficiently.
Instead, we should expect inefficiencies, and substantially more negative effects
on capability than might be expected from these inefficiencies, because of the
increasing role of “fixed-cost” overhead items. There is, in other words, a dis-

cipline gap that we should assume will not easily be reduced.

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