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RAND

Strategic Issues and Options for the Quadrennial Defense Review

Paul K. Davis, Richard L. Kugler, Richard J. Hillestad

National Defense Research Institute

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Prepared for the
Office of the Secretary of Defense

National Defense Research Institute

PREFACE

This paper, written in January, 1997, is an annotated version of a briefing given to senior Department of Defense officials at a two-day seminar held in RAND's Washington Office on December 13-14, 1996. The briefing was a structured but informal "think piece" to stimulate discussion, rather than a definitive report. Nonetheless, the work drew from extensive continuing analysis under RAND's "Planning Future Forces" project, a cross-cutting effort sponsored by the advisory board of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, and the defense agencies.

Upon receiving permission to publish in September, 1997, we decided not to update the paper, but rather to present it as documentation of what was originally developed—before the Department of Defense completed its Quadrennial Defense Review and before various changes of terminology and acronym occurred. Aside from a few explanatory footnotes and edits, then, the paper is unchanged from its January version.

SUMMARY

Purpose

As the Department of Defense conducts its first Quadrennial Defense Review (QDR), it will wish to examine a range of *strategic* options. The purpose in doing so is not so much to identify clear-cut alternatives, and then to choose one in pure form, but rather to consider some dramatized issues and choices as part of preparing for the synthesis of actual Department of Defense (DoD) strategy. This briefing is our attempt to assist in that process.

As described elsewhere, we recommend a "portfolio management" approach to defense planning. In this framework, DoD's investments are seen as contributing to a portfolio of activities (Figure S.1), the elements of which are (1) maintaining and improving capabilities for diverse military contingencies, both large and small; (2) shaping the international environment in the three principal regions of concern (Europe, the Greater Middle East and East Asia); and (3) assuring strategic adaptiveness so that the United States can in the future change the size, character, geographical focus, and posture of its forces readily in response to whatever technical or geopolitical challenges emerge.

Figure S.1—The Strategic Portfolio

By emphasizing capability-based planning for a wide range and many variations of contingencies, the approach encourages forces with operational adaptiveness at a given time. By elevating environment shaping to the same level as contingency capabilities, the approach recognizes the centrality of shaping efforts in current strategy, which seeks to prevent future crises and conflicts from arising. By elevating strategic adaptiveness to the same level, the approach assures that options will be evaluated not only against near- and mid-term challenges, but also against potential future challenges. This has implications not only for modernization, but also for alliances and total-force posturing.[1]

Strategic Options

With this framework in mind, we present four strategic options representing different perspectives about military strategy. Option 1, *Pragmatic Evolution*, represents the view that the current force structure, program, and strategy are "about right," with current capabilities being adequate and with new capabilities emerging naturally as the result of Service innovation. Option 2, *Focused Evolution,* is a variant that sees the United States as having "Achilles' heels" such as inadequate ability to defeat invasions involving short usable warning and access problems, opposition at key entry bases, and weapons of mass destruction. Option 2 also stems from a worry that important changes in forces and doctrine may in fact not go beyond the study phase if budgets tighten. It then combines these concerns by establishing a high priority for addressing the Achilles' heels problems and doing so specifically by exploiting new concepts and weapon systems involving long-range precision strike and small rapidly deployable units, albeit on a small scale. It would maintain this priority even at reduced budget levels by sacrificing end strength on the margin.

Option 3, *Reengineering Forces and Doctrine*, proceeds from the belief that the burden of proof is on those who wish merely to "evolve" DoD's forces when dramatic reengineering in other domains has generated more functionality with fewer people and lower costs using advanced information systems and other forms of technology. Option 3 postulates that military end strength could be reduced significantly while maintaining or increasing military capabilities for most (but not all) missions, the principal exceptions being infantry-intensive operations. It envisions "changing the tokens" by which forces are characterized—from divisions, wings, and carrier battle groups to something like enhanced-capability brigades, enhanced-capability squadrons, and contingency-capable battle groups. The reengineered ground forces would operate with fewer layers than today, often in task forces using corps/brigade structures. Although mechanized forces would remain central (e.g., armored cavalry regiments), there would be a greater proportion of light forces such as air-mobile/air-assault, attack-helicopter, and mobile-missile (Army Tactical Missile System, ATACMS) brigades. Option 3 would maintain numerous mechanized infantry brigades for missions that do not lend themselves to pure technology solutions, but at lower budget levels especially it would rely on reserves to fill out this component of ground forces in more demanding contingencies. As part of the reengineering, Option 3 would emphasize environment shaping by maintaining—at all budget levels—substantial overseas presence. However, in some cases this presence would consist of smaller but capable ground and air units, and/or contingency-capable battle groups built around cruisers and arsenal ships. These would provide for early-in-crisis command and control, air and missile defense, and

[1] This paper, written in January 1997, uses terms like "MRC" and "MOOTW," while more current usage would be "Major Theater of War (MTW)" and smaller-scale contintency (SSC). Also, the material here does not discuss the outcome of the Quadrennial Defense Review (QDR) issued in May, 1997.

missile strikes against armored forces and other targets. This option would go even farther in "engagement" than Options 1 and 2, emphasizing the build-up of alliances and coalitions (formal or informal) for each of the major regions, and seeking additional ways and places for overseas presence.

Option 4, *Embrace the RMA (Revolution in Military Affairs) Early*, also involves reengineering, but it takes the perspective that the principal challenge is to prepare for the era about twenty years from now in which current forms of warfare may be obsolete. It reflects the view that even high-end regional adversaries of that era will have long-range missiles, area munitions, weapons of mass destruction (WMD), unpiloted aerial vehicles (UAVs), and doctrines designed to counter current-day U.S. and regional forces. Thus, it emphasizes moving U.S. forces and doctrine toward an era of small and highly dispersed forces, *very* long-range precision fires, increased dependence on space (presumably less vulnerable than air bases), and stealthy ships and submarines. It would avoid investment in potential "dinosaur systems" (proponents might argue that tanks, short-range fighter aircraft, and carrier battle groups are examples, although others disagree), and would defer major procurements until appropriately advanced systems are ready.

Evaluation of Options

We evaluated the options in our portfolio-management framework using the familiar stoplight display. Figure S.2 shows a simplified version that aggregates over theaters and other subtleties. It shows multiple evaluations for each option (the columns) and does so for a full-budget and reduced-budget funding level. The evaluations are indicated as green (5), chartreuse (4), yellow (3), orange (2) and red (1) indicating a spectrum of very good to very bad.[2] The contingency capability assessment (summarized here by capability for two MRCs) reflects extensive wargaming and analysis. The assessments for environment shaping and strategic adaptiveness are based on structured subjective methods. *All* the assessments are subject to disagreement at the margin, but the major trends seem valid.

Option 1 provides very good contingency capability in "standard scenarios," but does poorly in many stressful scenarios involving late deployment. It provides fairly good environment shaping, but overseas presence is arguably on the marginal side (naval presence is barely adequate). Option 1's program also provides good technology-related strategic adaptiveness at baseline budget levels because of the many innovations being pursued by the Services. The force could be scaled up in response to a less technology-oriented threat development, but there are adaptivity problems related to basing and large ground threats. Option 1 scores quite poorly at low budget levels because empirical experience indicates that a 15% cut in budget would probably translate into a 30% cut in force structure, which would severely hamper two-MRC capability and environment shaping.[3] The United States would be perceived as withdrawing and unable to provide the stabilizing functions it now does. Strategic adaptiveness would suffer because innovations might be casualties of budget cuts,

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[2] For those reading a non-color manuscript, black corresponds to red, dark gray to orange, diagonal stripes to yellow, light gray to chartreuse, and white to green.

[3] Readers who associate themselves with Option 1 may argue that a "sensible" version under a 15% budget cut would do much better than we indicate: the Deparment of Defense would revisit basic issues and make changes in ways of doing business, doctrine, and perhaps in strategy. Our response here is that such adaptations would then look more like our Option 3 (or a regrettable scaling back of objectives), whereas our Option 1 is intended to represent more "inertial" processes in which a series of individually small budget cuts would be dealt with by a series of unimaginative scale-down actions.

force levels might be too low to permit easy scale-up, and alliance problems would increase with perceptions of disengagement.

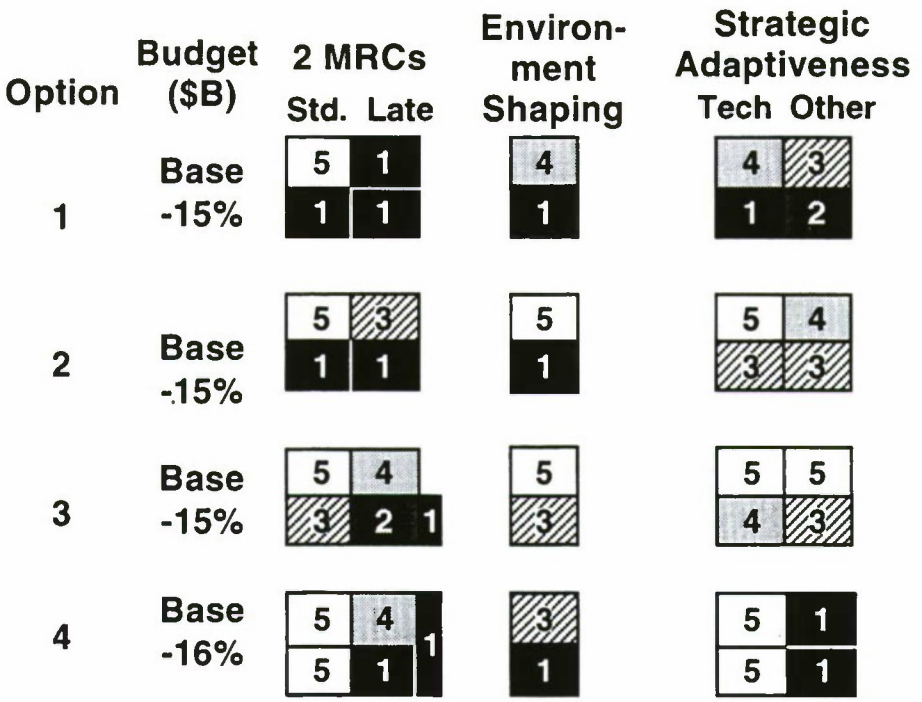

Figure S.2–Evaluation of Strategic Options

Option 2 provides better contingency capability because it explicitly focuses on addressing the Achilles' heels problems related to late deployment. We assume here that these actions also help somewhat on environment shaping because the problem-solving related to Achilles' heels should be reassuring to allies. The forces introduced would enhance strategic adaptiveness by introducing new units and doctrine, which might also "free up" some more traditional forces for other purposes. At the reduced budget level, Option 2 is substantially superior to Option 1 in terms of strategic adaptiveness because it gives innovation and modernization priority over force structure on the margin. Otherwise, it also fares badly at the reduced budget level because of the force structure cuts and general austerity.

Option 3 is essentially "wired" to be the winner, and it is. That is, Option 3 was designed to emphasize environment-shaping and strategic adaptiveness, while addressing Achilles' heels as in Option 2, but at the price of reduced end strength. The evaluation for contingencies postulates the success of the reengineering. Our analysis could be wrong, but our judgment is that the kinds of reengineering it calls for would in fact provide more capability (for most missions) at less cost. Thus, at current budget levels, it would provide more capability; at lower budget levels capability would suffer, but not nearly so much as in Options 1 and 2. Environment-shaping *should* improve and remain fairly strong even at lower budget levels

because overseas presence and engagement would be maintained as a priority.[4] This might also improve "non-technological" strategic adaptiveness because the close engagement with allies would tend to proactively enlarge the network of friendly nations, build coalitions, and provide alternatives and hedges against loss of particular forward basing. At reduced budget levels, Option 3 would likely have problems in contingencies needing large ground forces. Such contingencies are plausible, since nations often fail to act decisively early and find themselves having to come from behind in long and difficult operations that are inherently manpower intensive. Further, if Option 3 sacrifices too much end strength at lower budget levels, there are questions about its ability to maintain appropriate levels of worldwide engagement in military operations other than war (MOOTW) and lesser regional conflicts (LRCs), activities that contribute to environment shaping. Such concerns exist even with today's forces, although most of the problems appear to be due less to numbers of people than to management practices. In any case, our score for this is only yellow (3). The red "sliver" at the side reminds us of plausible wars that would require even larger traditional ground armies than those assumed for the two-MRC evaluations.

Option 4 scores unimpressively for 2010 because it is so pure an option and the problems for which it is designed do not seem highly credible by that time. It is especially vulnerable to wars requiring large armies and it deemphasizes environment-shaping. Starting down the path of Option 4 with excessive enthusiasm would create vulnerabilities for some years. Also, Option 4 has adaptivity problems because of its strong "tilt" toward technology-intensive warfare with little hedging in the way of ground forces or emphasis on coalition building. Thus it is a high-risk option. However, by 2015 or so it *could* prove optimal.

In summary, the reengineering option looks best, but this is to some extent the result of postulates. There clearly exist technical and doctrinal uncertainties. Option 2 is an interesting compromise that would hedge against moving too precipitously toward concepts and forces not yet proven.

Ultimately, the purpose of the work was not to compare options as though they were the actual choices available to decisionmakers, but rather to dramatize certain points. The most important, it seems to us, are

- The portfolio framework improves the way in which options are evaluated. If one takes environment-shaping and strategic adaptiveness seriously, then it should have tangible effects on the defense program and posture. In our options, this took the form of a priority on overseas presence, coalitional engagement, and protection of advanced programs, even if stretched, in Option 3.

- Business as usual along the lines of Option 1 will not suffice if there are even relatively moderate budget problems (e.g., constant budgets without adequate inflation corrections). Natural organizational tendencies under business-as-usual practice and budgetary salami-slicing are (1) holding onto traditional measures of structure (end strength and numbers of familiar tokens such as divisions, wings, carrier battle groups [CVBGs] and marine expeditionary forces [MEFs]); (2) deferring

[4] An important caveat: Without a major effort to work with and convince allies and other nations that U.S. reengineered forces were as or more capable than before cuts in numbers of personnel, the effects on environment-shaping could be *negative*, not positive. The most convincing approach would be to involve selected allies in the modernization activities and in development of new doctrine. The approach might fail. Note, however, that the overall thrust of our conclusions is not affected if merely one lowers the environment-shaping scores of Options 2 and 3 a bit.

modernization of both forces and doctrine; and (3) scaling down units in a way that would convey to the world a sense of disengagement—i.e., a de facto change of strategy toward neoisolationism.

- To avoid this, reengineering with top-down guidance is critical. It would involve substituting capital for labor in redesigning the major formations (changing the tokens) to maintain the number of major formations and functionality for most missions despite reductions in end strength.

- Even at constant budget levels, Options 2 and 3 are superior if one gives reasonable weight to environment shaping, strategic adaptiveness, and two-MRC capability for operationally stressful cases involving late reaction, opposed entry, and WMD. Also, Option 3's emphasis on environment shaping might improve strategic adaptiveness in "non-technological" respects, as when relations with particular nations sour or particular base arrangements are terminated.

- The favorable ranking of Options 2 and 3 is not contrived. A great deal of problem-solving and cost-cutting reengineering could be accomplished with near- and mid-term technology, plus major changes of doctrine and procedure. There is no need to wait for exotic technology to begin applying the sounder features of what is often discussed as the revolution in military affairs. At the same time, it *is* important to hedge against contingencies that require large forces, not just precision strike.

- Option 3 could be a stepping stone toward Option 4, if that proves attractive.

The next step, of course, is to go beyond abstractions to program levels of detail. That is the focus of our ongoing research.

ACRONYMS AND ABBREVIATIONS

ACCB	Air Combat Cavalry Brigade
ACR	Armored Cavalry Regiment
AEF	Air Expeditionary Force
AF	Air Force
ATACMS	Army Tactical Missile System
AWACS	Airborne Warning and Control System
BAT	Brilliant Anti-Tank Munition
BUR	Bottom-Up Review
CAS	Close Air Support
CCBG	Contingency Capable Battle Group
CCSAG	Contingency Capable Surface-Action Group
CONUS	Continental United States
CVBG	Carrier Battle Group
CW/BW	Chemical Warfare, Biological Warfare
C^3I	Command, Control, Communications, and Intelligence
C^4I	Command, Control, Communications, Computers, and Intelligence
DoD	Department of Defense
DPRK	Democratic People's Republic of Korea (North Korea)
FOLPEN	Foliage Penetration Radar
FYDP	Future Years Defense Plan
HPM	High-Powered Microwave
HR	High Readiness
ISR	Intelligence, Surveillance, and Reconnaissance
JSTARS	Joint Surveillance Target Attack Radar System
JTF	Joint Task Force
LR	Long Range
LRC	Lesser Regional Conflict
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force

MMB	Modern Mobile Missile Infantry Brigade
MOOTW	Military Operations Other Than War
MRC	Major Regional Conflict
OPTEMPO	Tempo of Operations
OSD	Office of the Secretary of Defense
PCS	Permanent Change of Station
PGM	Precision Guided Munition
QDR	Quadrennial Defense Review
RISTA	Reconnaissance, Intelligence, Surveillance, Tracking, and Acquisition
RMA	Revolution in Military Affairs
SAMs	Surface-to-Air Missiles
SEAD	Suppression of Enemy Air Defenses
SOF	Special Operations Forces
SSBN	Strategic Missile Submarine
SSN	Attack Submarine
SWA	Southwest Asia
TACMS	Tactical Missile System
TDY	Temporary Duty
TFW	Tactical Fighter Wing
TMD	Theater Missile Defense
TOA	Total Obligational Authority
TRADOC	Training and Doctrine Command
UAV	Unpiloted Aerial Vehicle
UCAV	Unpiloted Combat Aerial Vehicle
USCENTCOM	United States Central Command
WMD	Weapons of Mass Destruction

Strategic Issues and Options for the QDR

Paul K. Davis,
Richard Kugler, Richard Hillestad
December, 1996

This is an annotated version of a briefing delivered to senior officials and military officers on December 13, 1996, as part of a two-day activity at RAND to explore issues for the Quadrennial Defense Review (QDR). The focus of this briefing, which represents work in progress rather than the final results of a study, is on mid- and long-term aspects of the defense plan. Thus, the briefing is strategic in character. It articulates strategic *options* and provides a tentative and provocative assessment of those options under a variety of different considerations. The options serve to dramatize issues and choices.

Context for Strategic Planning

- ***Old framework at end of useful life***
- ***Challenges involving***
  - *expanding interests and geographical scope*
  - *changing nature of military operations (RMA?)*
  - *uncertain future environment*
  - *tightening budget*
  - *poorly prepared allies*
- ***No analog to old simplifying precepts***
- ***Key precepts for planning under uncertainty:***
  - *Operational and strategic adaptiveness*
  - *environment-shaping*

It is now recognized that threat-based planning with its characteristic point scenarios and associated "requirements" for force structure is no longer useful—at least on a standalone basis. To be sure, Iraq and North Korea continue to be worrisome threats, but focusing mid- and long-term planning on them would not be appropriate. The United States also has many other military challenges, but none of them are currently comparable to what generated such simplifying cold-war concepts as containment and forward defense. The premium for now is on peacetime activities to prevent the circumstances that could lead to major threats and war, and on flexibility. In a longer view, there are two interacting effects at work: the need to accommodate to changes in military technology and the need to adapt appropriately to changes in international politics, which may or may not involve new "regional threats," tensions with Russia or China, proliferation, and military operations in new areas as NATO enlarges and other expansions of interest occur. To discuss such matters, we use a new RAND framework for defense planning that emphasizes environment-shaping and both strategic and operational adaptiveness. In essence, the new precept is one of planning under uncertainty.*

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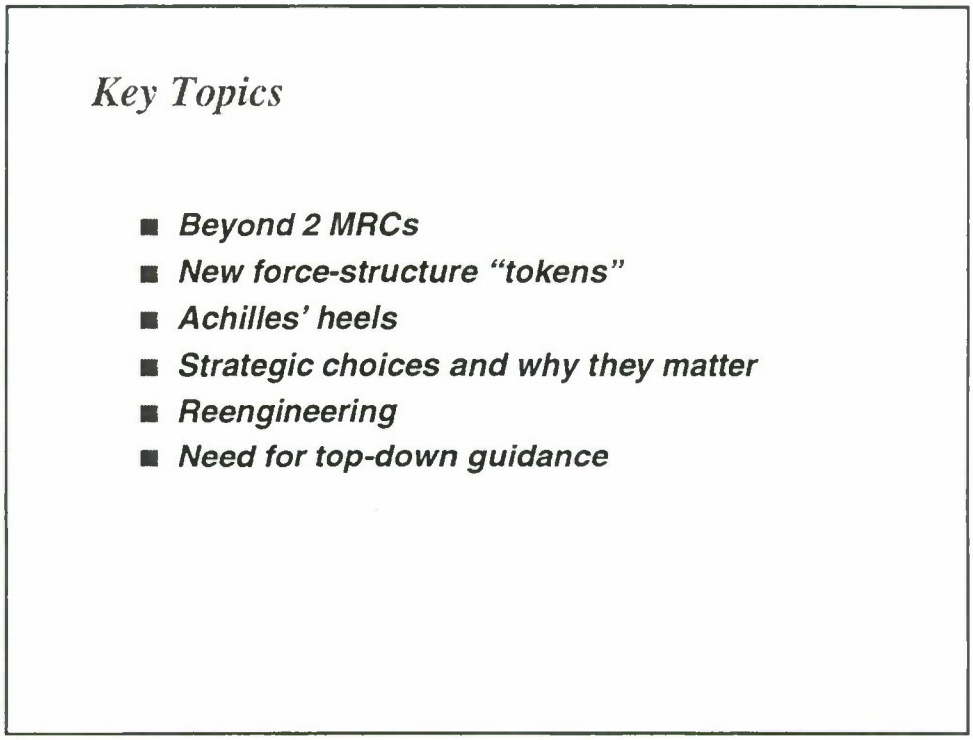
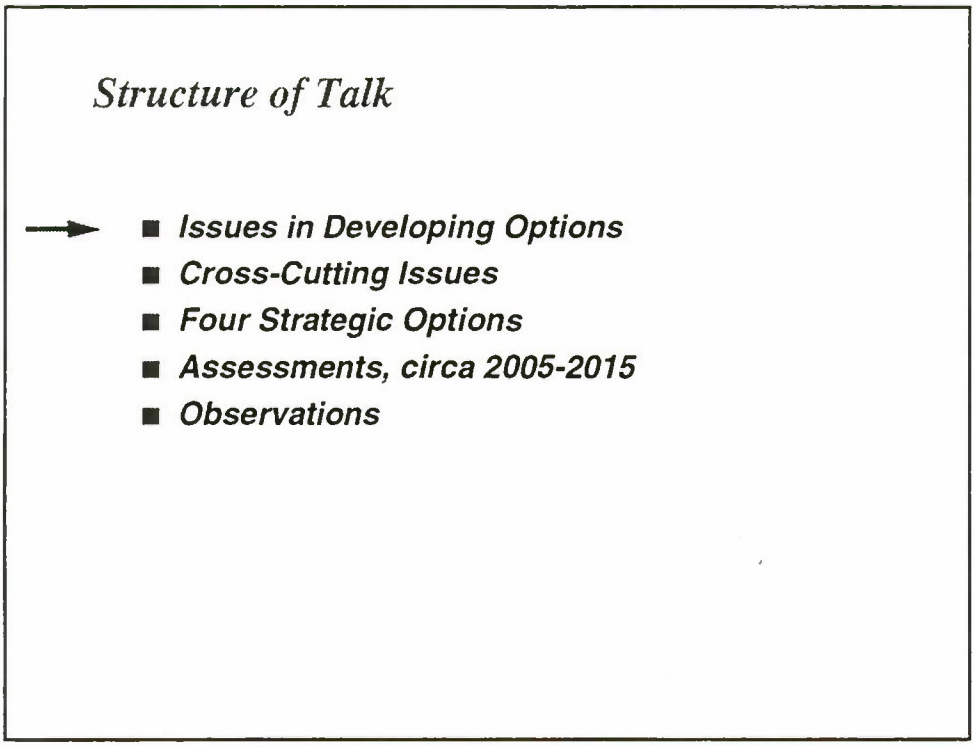
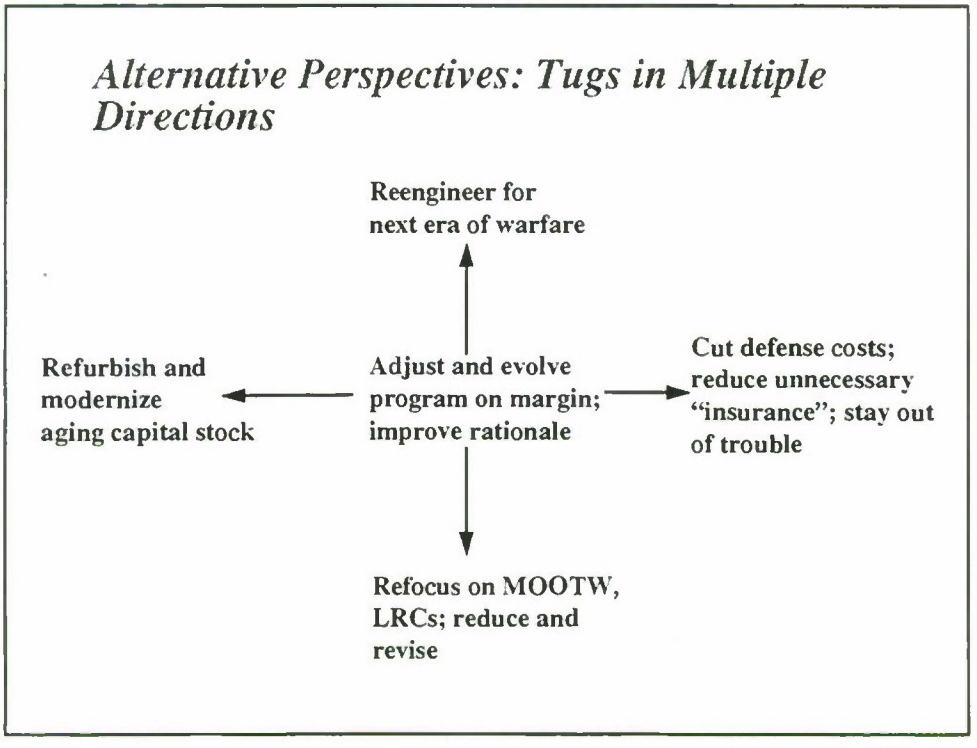
*See Paul K. Davis, David C. Gompert, and Richard L. Kugler, *Adaptiveness in National Defense, the Basis of a New Framework*, RAND, IP-155, August 1996.



Certain topics arise repeatedly in the briefing. These are the items on which we hope there are "take-away" ideas. One is going beyond the two-MRC criterion without abandoning it. A second is moving away from defining force structure in terms of the old familiar "tokens" of divisions, carrier battle groups, wings, and Marine Expeditionary Forces. A third is recognizing that while U.S. contingency capabilities will remain substantial, there are Achilles' heels problems that deserve priority attention. The other topics involve the importance of strategic choices in the QDR, reengineering forces as well as infrastructure, and the value of and need for top-level guidance.



The briefing is structured around the desire to build and evaluate strategic options. However, the first half is not about the options, but rather about ground-laying concepts. We begin by discussing the range of considerations that should affect option development and why we have chosen ultimately to focus on some rather than others.



What kinds of issues should inform option creation? Different perspectives pull DoD planners in opposite directions. This slide shows the most important. In the center is the baseline perspective, which sees the defense program and posture as about right, but in need of improved rationale. As shown to the left, there are critics who are concerned that the government will continue to underfund procurement, which will lead to unacceptable aging of equipment and drops in readiness.

At the right side are those who see the price tag for the U.S. defense budget as huge in comparison with other nations. These observers believe that the current budget is simply too large in a period of diminished threat and other federal priorities. Some go farther and take the view that the United States should moderate its overseas activities and interventions, focusing on truly vital interests and "staying out of trouble." This group has been suspicious about activities in Bosnia, Haiti, Somalia, and elsewhere. Some in this group also believe that the United States should *disengage* militarily from places like Korea as soon as possible.

By contrast (bottom), many observers believe that the Department of Defense should be focusing *more* on lesser regional conflicts (LRCs) and military operations other than war (MOOTW). Some support the continuing heavy involvement in MOOTW particularly, because they see it as part of America's role in shaping a better world. Others are less enthusiastic but no less convinced that MOOTW and LRCs are the real business that occupies our forces every day. From this perspective, the DoD should be planning more explicitly in terms of these, rather than hypothetical large wars.

Last (top), there are observers who believe that a revolution in military affairs is taking place and that the top priority for mid- and long-term planning should be to transform U.S. forces for the problems likely to arise in 20 years (e.g., the "competent competitor" and a world with more proliferated WMD). Preparing for such a world could head off emergence of competitors or assure that they can be dealt with appropriately. Since the future is uncertain and the implications of new technologies not fully understood, many of those supporting an RMA approach emphasize experimentation during this period in which some failures of doctrinal innovation would involve little risk.

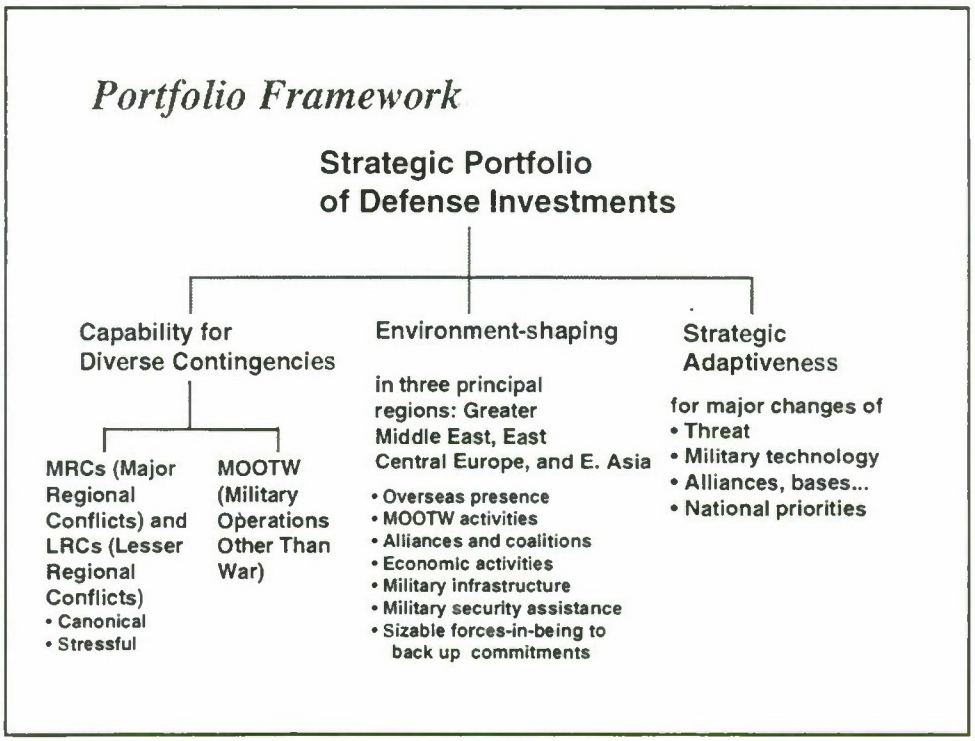
Focus Dimensions for Creating Options

- ***Modernization and recapitalization***
- ***International engagement***
- ***Sizing and posturing***
- ***Budget level***

- ***Weights in "portfolio-management framework" affect evaluations***

The dimensionality of the planning problem, then, is large. Choices must be made, however, and in this briefing we develop strategic options focused on the dimensions indicated here: modernization/recapitalization, international engagement, sizing, and budget level. The options generated cover most of the interesting space.

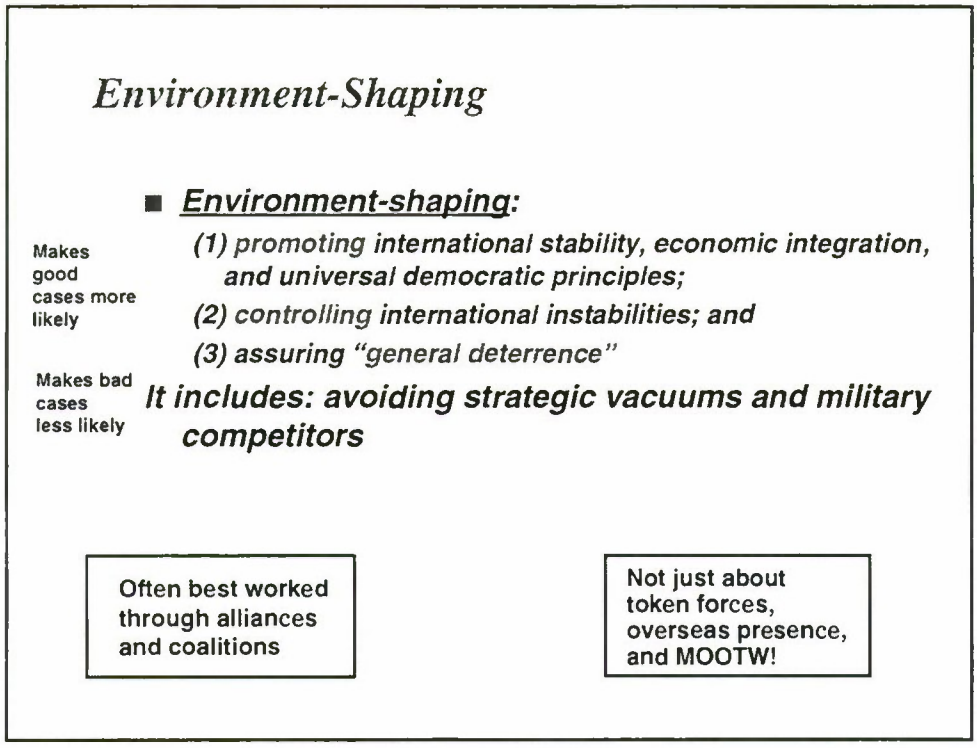
The options also reflect differing views about how the program should be balanced across the components of what may be considered an investment portfolio (next slide).



This slide depicts RAND's "portfolio management" framework for defense planning. Its most important features are (1) elevating environment-shaping and strategic adaptiveness to the same level of visibility as contingency capabilities; (2) recognizing that contingencies come in all sizes, shapes, and circumstances; and (3) dealing with the potential synergisms and conflicts among portfolio components.

The portfolio approach conceives investments of three types—those focused on capabilities for contingencies, environment-shaping, and strategic adaptiveness. Planning is then seen as making judgments about how best to allocate the investments across the categories. There are some subtleties. Many contingency capabilities contribute to environment-shaping—either positively or negatively. Thus, environment-shaping investments are investments to *further* increase U.S. effectiveness in this category. Similarly, many activities undertaken to enhance both contingency capabilities and environment-shaping can influence strategic adaptiveness (positively or negatively). Investments in this category are investments to *further* increase U.S. strategic adaptiveness. In principle, the United States could build its forces entirely for warfighting and find them suitable for environment-shaping and strategic adaptiveness.

In practice there are conflicts: Near-term readiness often conflicts with building capabilities for future years; some contingency capabilities are of little value for environment-shaping because they seem abstract and remote; activities taken in peacetime to enhance contingency capabilities (e.g., a strong forward presence and de facto control over local forces through the command and control system) may have negative environment-shaping effects because of perceptions of U.S. interference with sovereignty. The United States lost its base in the Philippines for such reasons and from time to time there are problems in Okinawa, Korea, and Japan. Persian Gulf states are often ambivalent or negative about U.S. military presence.

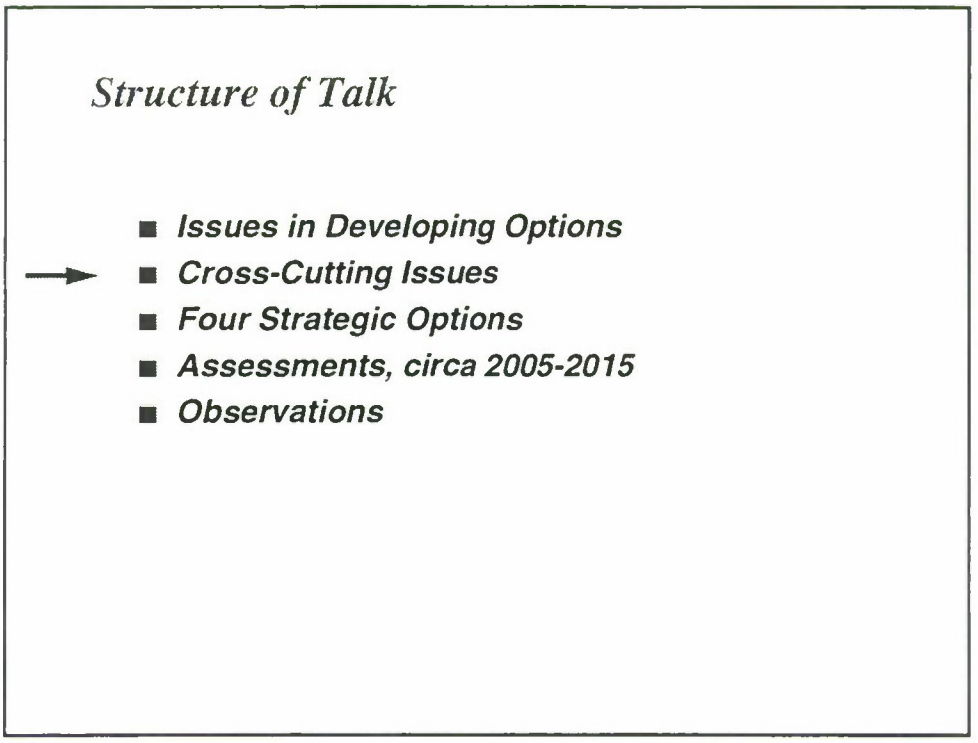


This slide elaborates by defining environment-shaping, which is consistent with the activities envisioned under the National Security Strategy's rubric of Engagement and Enlargement. Note that it has a positive side (e.g., promote stability) and a side that deals with controlling and deterring.

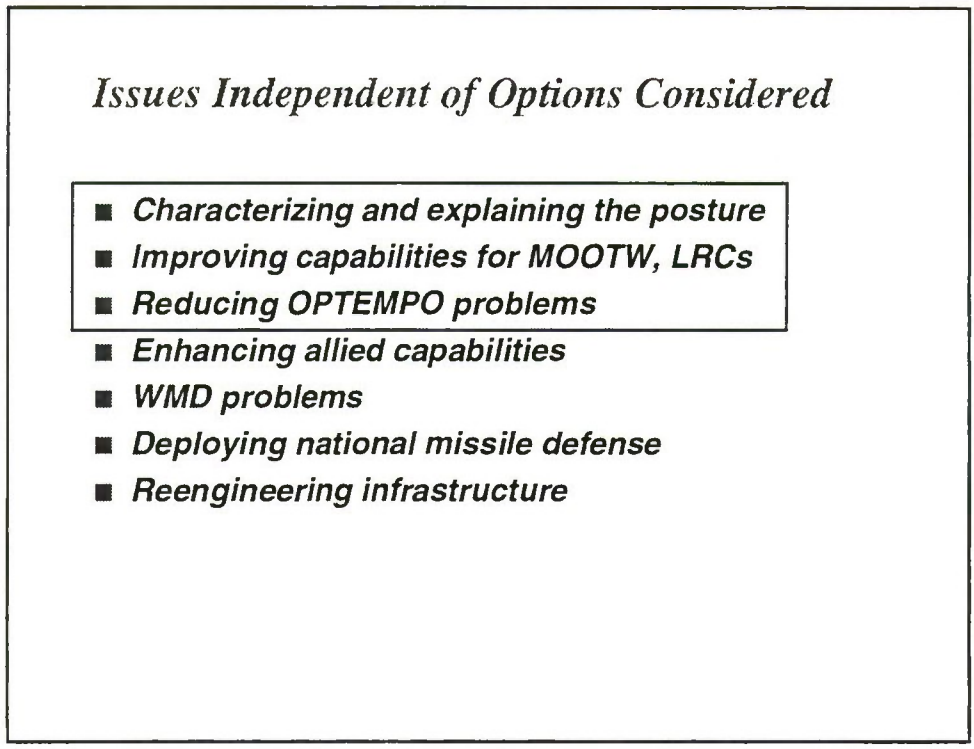
One important component of environment-shaping is overseas presence. Another is U.S. participation in or leadership of MOOTW ranging from disaster relief to peacekeeping. Less obvious are activities associated with regional security such as support of and commitment to regional military alliances and coalitions, and the education and training of regional states' military officers. To be sure, any of these activities can backfire, negatively affecting the environment as occurred in Iran. Even MOOTW activities can be seen in some cases as interference by a foreign power. In what follows, we *assume* that U.S. diplomacy uses the instruments of environment-shaping well.

Taken together, the various environment-shaping activities require a meaningful force commitment. Presence and some peacekeeping activities are not themselves sufficient, because *the primary goal under environment-shaping is avoiding strategic vacuums that might stimulate regional states to seek local military domination.* This requires substantial forces-in-being. It also requires, for each major region, appropriate formal or informal alliances and coalitions.

To address again one of the confusing items here, investments in contingency capabilities provide capabilities for LRCs and MOOTW, which make possible environment-shaping activities such as particular interventions. However, the United States also needs to invest in alliance activities and commitments, and in overseas presence, to further increase the quality of environment-shaping. While some portion of these activities could be charged against contingency capability, that is often not their primary purpose. For example, current investments in NATO are more naturally seen as attempts to assure long-term stability in Europe than as attempts to prepare for contingencies.



Against this general background, let us next discuss issues that cut across the options that will be defined and examined in more detail later in the briefing.



This slide shows six important issues that can be debated and addressed more or less independently of the strategic options we present. We touch on the first three in subsequent slides. The other subjects are treated elsewhere.

It may seem counterintuitive to suggest that the three boxed items can be cross-cutting: Surely, one might argue, the options should differentiate among them! It is certainly true that we could have constructed options that would have done so. However, we believe there is the potential for consensus on these issues—or, at least, on how to discuss them.

Characterizing the Force and Posture

- ***Current standard: "two-MRC capability"***
- ***Problems:***
  - ***Perceived by some as conservative, unworldly, old-think, and by others as dangerous exaggeration***
  - ***Focuses exclusively on large wars***
  - ***Leaves DoD program vulnerable if, e.g., N. Korea "goes away"***
- ***Strengths:***
  - ***For near-term, two rogue states exist: the two-MRC criterion is easy to explain***
  - ***Makes permanent sense for deterrence and policy***
  - ***Leads analytically to "sensible" total force***

The first cross-cutting issue is what should succeed the two-MRC criterion as the characterization and justification of force posture. As this slide indicates,* that venerable criterion standing alone has many limitations, despite its continuing virtues.

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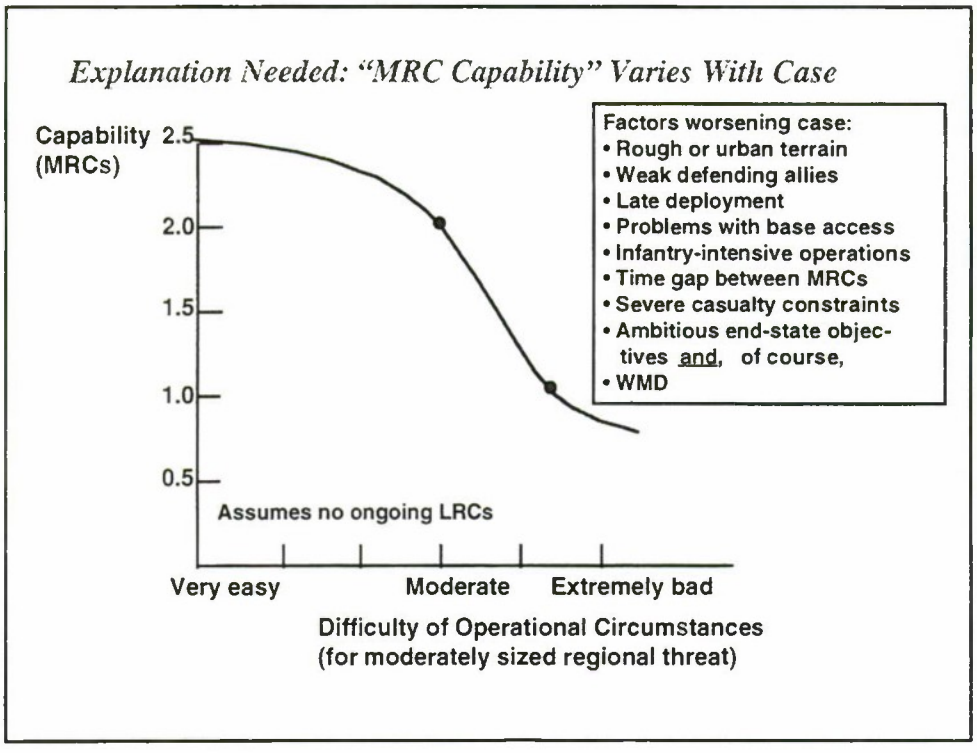
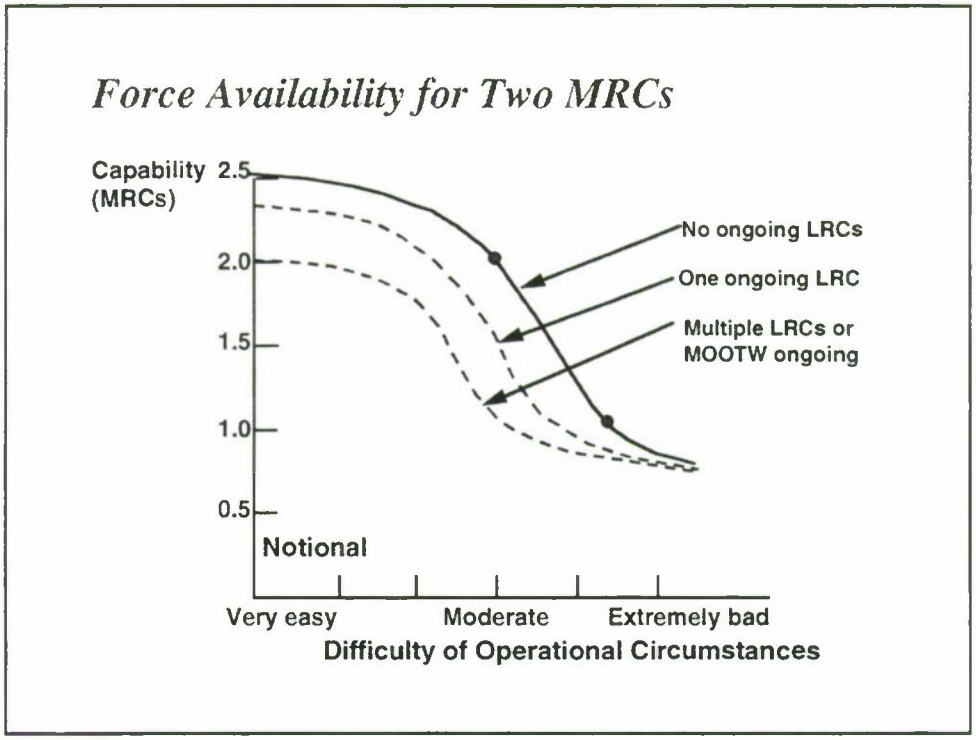
*The material covered here is drawn from Paul K. Davis and Richard Kugler, "New Principles for Force Sizing: Beyond the Two-MRC Criterion," in Zalmay Khalilzad and David Ochmanek (eds.), *Strategic Appraisal 1997: Strategy and Defense Planning for the 21st Century*, RAND, Santa Monica, CA, 1997.



A first improvement of rationale would be for the DoD to repeatedly explain what two-MRC capability does and does not mean. This slide stresses that capability for MRCs depends on the operational circumstances. The capability sought under the DoD's two-MRC criterion is neither highly conservative (a concern at one end of the spectrum), nor unrealistic (a concern at the other end). It is capability adequate for two only "moderately" difficult MRCs. With such capability, in some hypothetical circumstances the United States could deal with *more* than two simultaneous MRCs, while in other circumstances it would do well to cope with even one. The factors at work here involve terrain, the capability of the defending ally, existence and use of warning, end-state objectives (e.g., restoring a border rather than going on to pursue and conquer the invader nation), and whether WMD are used. By planning for two "moderately difficult" contingencies, the DoD seeks a high level of deterrence against traditional aggression without being grandiosely ambitious. This continues to be a prudent goal.

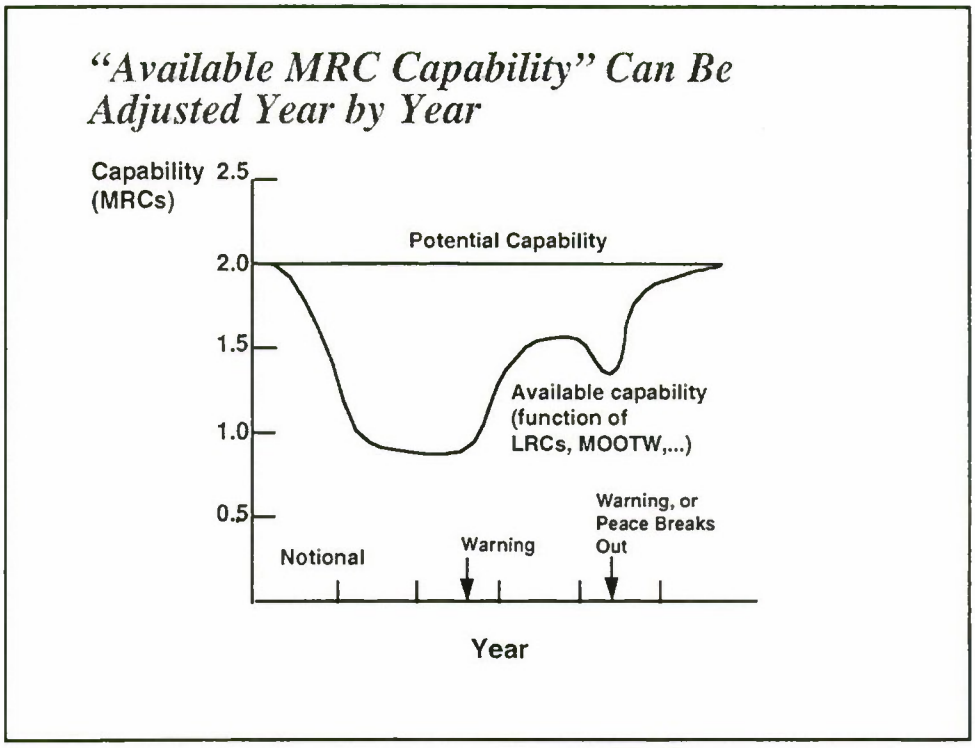


The preceding slide assumed forces were available for MRCs. Of particular interest in the current debate, however, is the effect of ongoing LRCs or MOOTW. This slide suggests notionally what that effect might be.

While most MOOTW and some LRCs involve only a small fraction of the total force, they can have a disproportionate effect on U.S. ability to conduct MRCs effectively. Some of the reasons include:

- A shortage of critical support units (C^4 /ISR [Command, Control, Communications, and Computers/Intelligence, Surveillance and Reconnaissance], AWACS [Airborne Warning and Control System] squadrons, engineers, etc.);
- Significant demands on airlift;
- The demands on decisionmakers, from whom each operation tends to extract considerable time;
- The rotation base needed to support a continuing operation (e.g., several units may be tied up for every one that is actually being employed at a given time);
- The tendency to use some of the best U.S. capabilities for MOOTW/LRC activities when they arise; and
- The tendency to use more forces for MOOTW/LRC activities than probably necessary for narrowly construed success, because of a desire to minimize casualties and risks.

If MRCs arose, then U.S. forces could in some cases be extracted from MOOTW or LRCs, but in other cases that would be difficult or unconscionable. More generally, disengagement would mean transaction costs and delays. Realistically, when the United States is involved in such operations, it may not have residual two-MRC capability unless there is a significant time interval between the MRCs.



To elaborate, it is one thing to decide how much potential military capability to maintain for "big wars" (i.e., MRCs), and it is quite another to decide how much of that needs to be *readily available* for such purposes—as distinct from being available for lesser contingencies and MOOTW. The slide illustrates this with a notional plot of "available capability" for MRCs vs. time. The plot imagines that there is a period in which the United States is not much concerned about simultaneous MRCs, but is quite concerned about other events needing military intervention. Then a period of tension emerges in which a big war seems more likely and the U.S. force posture is adapted accordingly, although not overnight. Circumstances seem to improve and some lesser contingencies arise that need attention, but after that either tensions rise quite high—with the potential of simultaneous wars—or the world becomes more peaceful and U.S. forces find themselves largely unengaged except for routine presence operations and occasional natural disasters.

While the plot is purely notional, it reminds us that adaptations in force availability for big wars (MRCs) can be made relatively quickly in comparison to how long it takes to build or modernize the overall force structure. Thus, it is reasonable to talk about sizing the force for two moderate MRCs while, at a given time, choosing to engage in activities worldwide that reduce "available capability" to something less. There is no contradiction. Whether it is wise to tie up forces depends on circumstances at the time.

How many LRCs and MOOTW can the United States engage in without drawing down its MRC capability? The answer is unclear. The Joint Staff is conducting exercises and examining historical activity patterns to shed light on the issue.* One observation here is that intervention in SSCs can also help avoid crises from becoming MRCs. Thus, the tradeoffs are complex.

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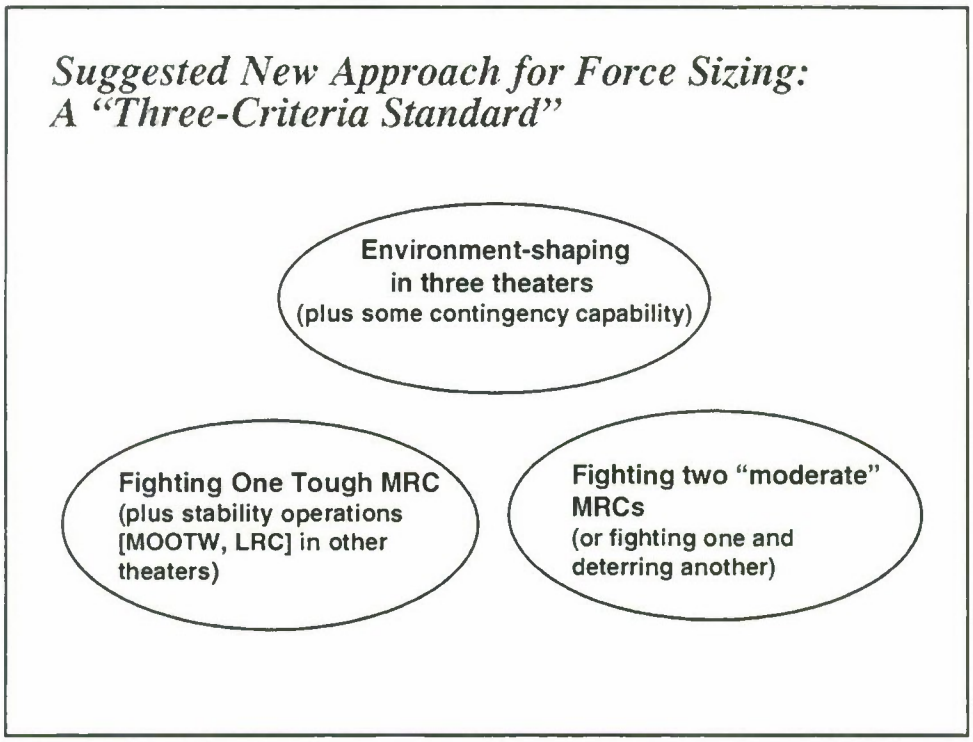
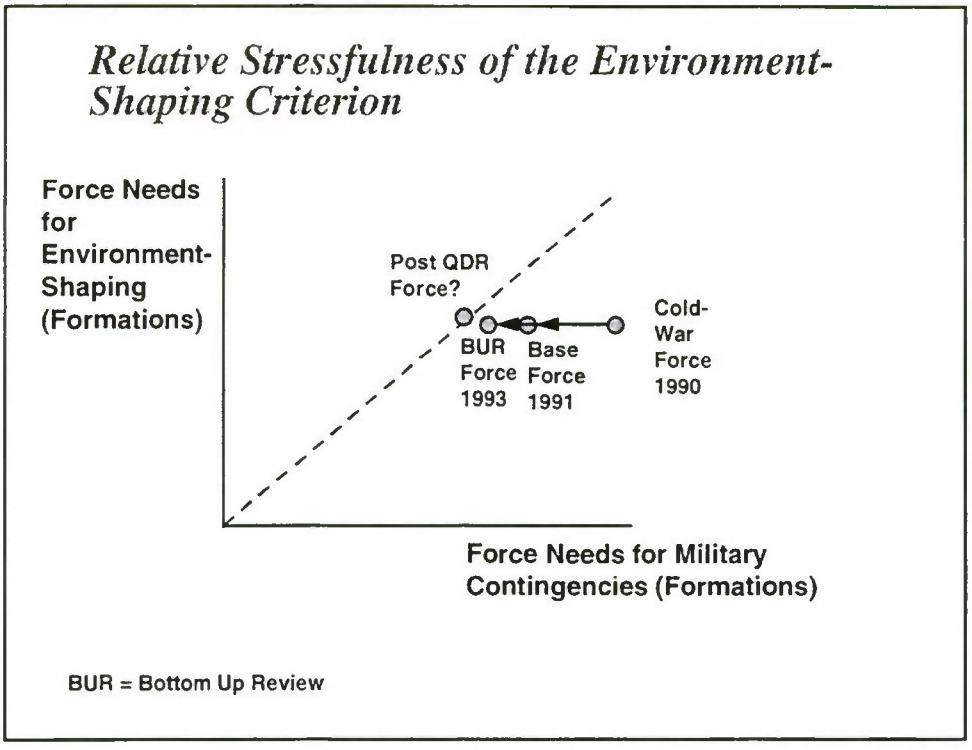
*The importance of availability and "slack" have been noted by others as well, including analyst Roy Rice and the Joint Staff. There are interesting analogies in the electric power industry. Here, however, we are also stressing that the United States has an extra strategic variable to work with on a year-by-year basis, and that recognizing this explicitly in policy and strategy documents, and discussions with Congress, could be quite useful in resolving difficult tensions.



So long as one understands that a "two-MRC force" may not all be available for MRCs, it is reasonable to use such a standard in deciding on overall force size. Even if the two-MRC standard is explained, however, it still does not stand alone very well. Our principal suggestion is to broaden the standard for force sizing and posturing by adopting a three-criteria standard as shown here. The two-MRC criterion would be retained because it makes sense strategically, but the DoD would seek to meet two other criteria as well—one starting from an environment-shaping perspective, and one starting from a one-MRC perspective. By estimating its needs under all three criteria (and with the preceding discussion of LRCs and MOOTW), the DoD could address the primary concerns raised by critics of the two-MRC standard. Further, it could substantially strengthen the overall case for the force decided upon.



As described elsewhere (the previously cited Davis and Kugler paper), the force needs suggested by the different criteria are quite similar in aggregate after one accounts for issues such as rotation base, reserves, and the possibility of worse-than-expected wars. This slide suggests that during the Cold War a much larger force was needed to meet contingency requirements. However, as tangible threats have disappeared or weakened, U.S. needs in that regard have gotten smaller. By contrast, the force needs for environment-shaping have not: They may even be increasing as U.S. economic interests extend over a longer strategic perimeter. It now appears that the environment-shaping criterion alone establishes the need for forces comparable to today's—when measured in numbers of major formations. While the conclusion rests on subjective judgments, we believe they are sound.*

The most important conceptual point underlying this assessment is that the United States has vital interests in three potentially unstable regions. Avoiding major problems in those regions is a very important long-term interest. The prescription, we believe, should include regional military alliances and networks adequate to avoid strategic vacuums and maintain stability. However, for such structures to exist the United States will need to show both leadership and commitment, which translates into force commitments large enough to provide militarily meaningful peacetime presence and an effective corps-sized Joint Task Force in time of crisis. Three regions then imply significant aggregate forces. While one could "nickel and dime" the numbers down, it would then become necessary to allow explicitly for a set of forces that would always be available for LRCs, MOOTW, and other emergencies.

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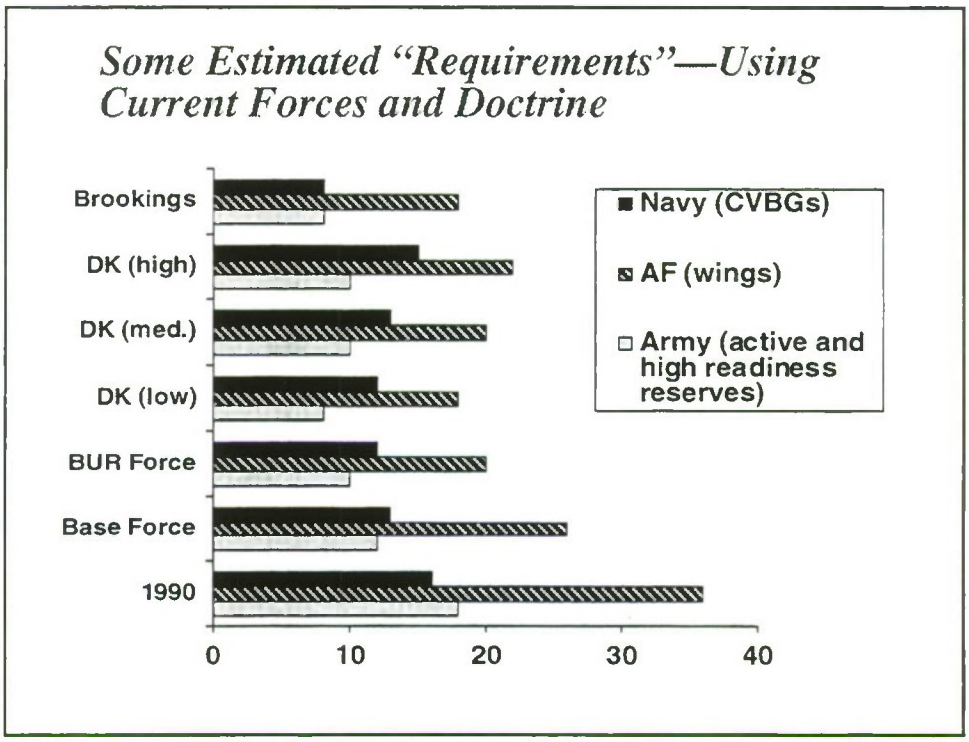
* The conclusion is without prejudice as to whether smaller major formations are possible and desirable, an issue discussed later in more detail.



This slide shows a range of estimated force needs from the Davis-Kugler paper (indicated as DK), contrasted with past and current force levels and those estimated by a Brookings study.* The estimates reaffirm something close to the BUR force. By contrast with the Brookings study, we believe that naval presence is even more important in today's world and should not be cut back further.** Also, the present level of Army forces is reasonable, although hypothetical high-readiness combat reserves could perhaps substitute for some of the active-component forces.*** Whether it is feasible to create such reserves, ready in days or a few weeks, is unclear. Historically, reduction of the active force has translated into loss of capability, since the Army National Guard's combat forces are at low readiness and are not well connected with the active Army. This would be difficult to change, although efforts are underway based on BUR decisions.

The most important caveat here is that these conclusions are based on current forces and doctrine. It may well be that new and smaller formations could accomplish some of the same missions with fewer people. That is the reengineering issue discussed later.

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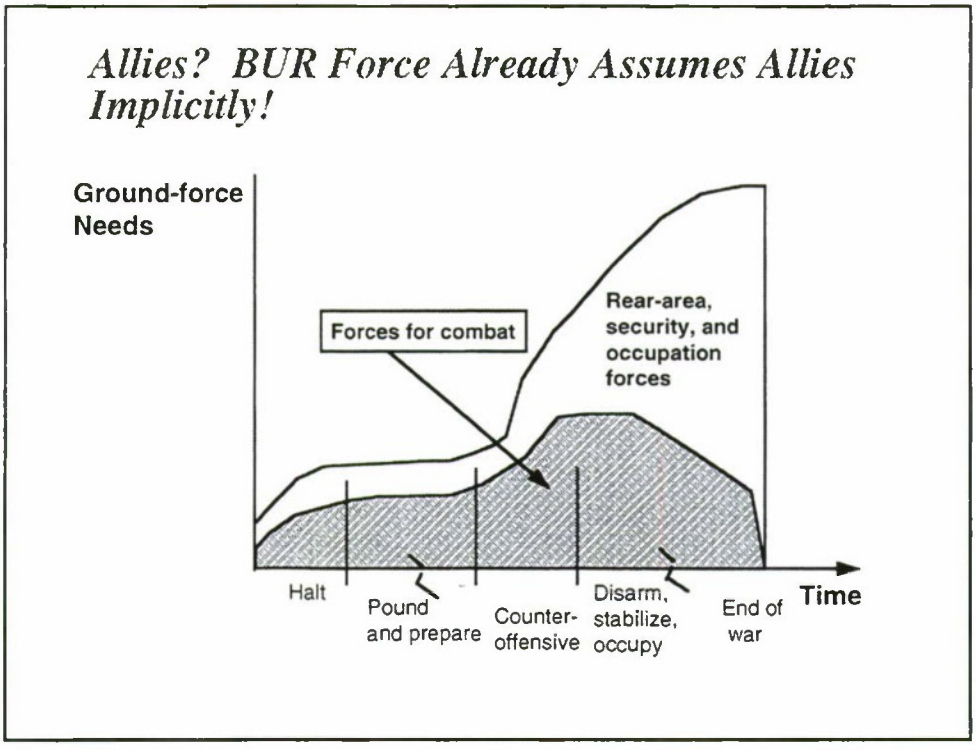
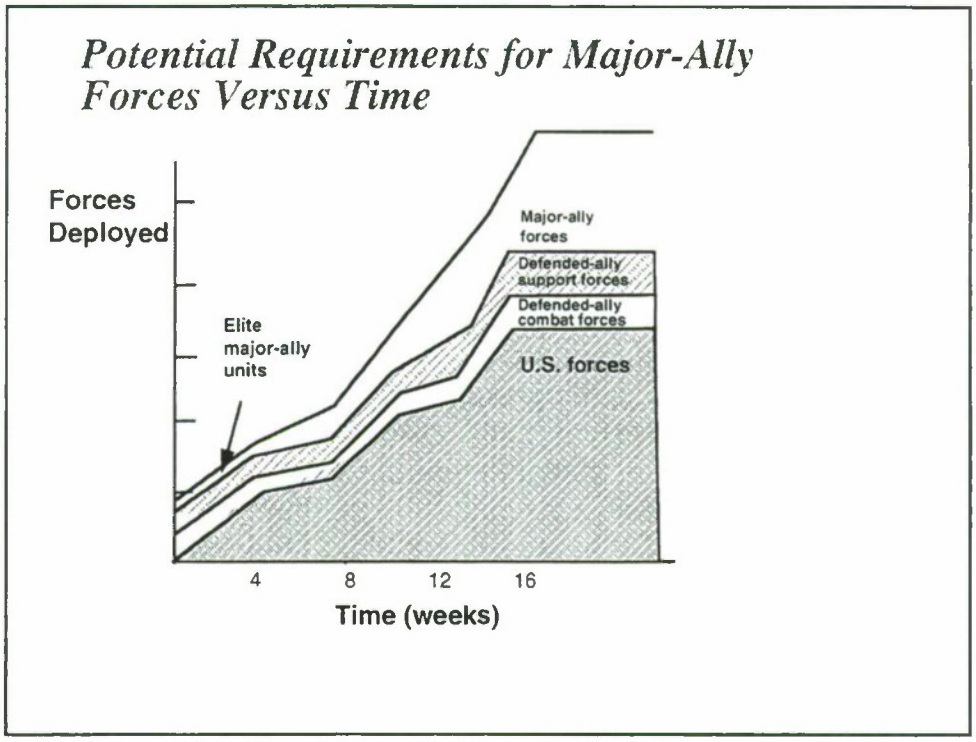
*Michael O'Hanlon, *Defense Planning for the Late 1990s: Beyond the Desert Storm Framework*, Brookings Institution, Washington, DC, 1995.

**One reviewer questioned this assumption, opining that naval presence is no better and in some respects is worse than other forms because ships can always sail away. Permanent Army forces can be a stronger sign of commitment. As for flexibility, he argued that air forces can deploy in and out as well as navies, given the invitation to do so. He further noted that overseas military presence is not always a positive influence for environment shaping, a point we also noted earlier. Nonetheless, naval presence continues to be uniquely important because of its mobility, logistical flexibility, relative inobtrusiveness and employability during ambiguous circumstances, special role in crises that involve sea lanes, and natural links to the naval and air forces of regional states that play a big role in peacetime and crisis. It is also worth noting that the current overseas presence is 50% Army, 35% Air Force, and 15% Navy in personnel, despite the common impression that the Navy has dominated.

***It is more plausible that the Army would find it possible to effectively use small National Guard or Army Reserve combat units (e.g, companies) than that the nation would create high-readiness reserve divisions ready within days or weeks.



What about allies as a way to reduce "requirements"? Each theater is different, but this and the next slide suggest schematically what is at issue. This slide reminds us that forces are needed not just for combat in the initial phase, but for a counteroffensive. Further, substantial forces are needed for rear-area security and, possibly, occupation functions. The defended nation's forces may be both critical and credible (e.g., South Korea) or very important but less dependable for some missions (Kuwait and Saudi Arabia). But what about major allies such as the U.K., France, and Germany? The BUR failed to discuss such allies significantly, and the DoD has been criticized as having sized its forces as though it were fighting alone. However, in our view the force needs for standard MRCs are significantly greater than those in the BUR, which can be understood by saying that the BUR *implicitly* assumed substantial eventual allied contributions to rear-area security, and to any post-victory occupation operations. In short, the "requirements" of the last chart cannot be reduced by glibly playing the ally card. The other problem here is that sizable major-ally forces (e.g., U.K., French, and German) are unlikely to be available and capable early in contingencies. This subject merits much more discussion than is possible here.



One view of how to think about allied forces is shown here schematically, with a theater like SWA (Southwest Asia) rather than Korea in mind. The slide assumes immediate and continuing contributions by the defended ally. It also postulates immediate commitment of major-ally forces—in part to broadcast signals of perceived legitimacy and international support, but only in the form of small elite units because of problems associated with logistics and multinational command and control. Within a matter of 2-3 months, however, the allied contributions could begin building substantially. By the time of a counteroffensive and possible requirements for large-area security and occupation, those contributions could be quite important.

Implications of Three-Criteria Standard

- ***Environment-shaping is now a limiting factor***
- ***Using current forces and doctrine, needs are "similar" for three criteria***
  - *May need increased naval presence*
  - *Could perhaps substitute some high-readiness reserves for active Army (and Air Force)*
  - *But BUR force looks reasonable*
- ***Need new "tokens": divisions, wings, and CVBGs lock in "old-think"***
- ***"Key to austerity: reduced infrastructure and end strength—not name of strategy***

If the DoD adopted the three-criteria standard, the following points would emerge. First, environment-shaping is a limiting factor for force sizing: It sets a floor at or not much below current force levels (in terms of units, as distinct from personnel). Second, while the total "requirements" for the three criteria are similar, there are some implications: the potential need for more rather than less naval presence, and the potential substitution of high-readiness combat reserves for active Army and Air Force units.*

The third point is perhaps the most important. So long as we think in terms of the old familiar tokens, the "requirements" will look very much like today's force. Although some trimming could be rationalized on the margin, it would indeed be rationalization. This makes little sense if one believes in modernization. The United States "should" be able to do more with fewer people. That is, through reengineering (as discussed later) it should be able to reduce not only infrastructure, but also the end strength of combat forces and their support. That is the key to dealing with austerity. By contrast, trying to find a new "strategy" (e.g., a 1-1/2 MRC strategy) to justify cuts is the wrong approach. The functional needs persist and the United States "should" be able to accomplish them by appropriate restructuring. More on this later.

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*There should be some movement also in the opposite direction, with some reserve support units converted into active units at the expense of "fighters."

Better MOOTW and LRC Capabilities Needed Under All Options

Measures Used for Analysis of Non-MRC Capability Options

- ***Casualty reduction and force protection***
- ***Capability to limit collateral damage***
- ***Rapid-response capability***
- ***Covertness***
- ***Situation awareness, assessment, and targeting support***
- ***Capability to limit U.S. commitment of manpower***
- ***(Usefulness in MRCs)***

The next cross-cutting issue is MOOTW and LRCs. RAND has done considerable work on these matters under the sponsorship of the Army, Air Force, and OSD (Office of the Secretary of Defense), but we discuss it only briefly here. First, we observe that there are many force-improvement options that would help in MOOTW and LRCs, but the measures of effectiveness for assessing them are different than for MRCs. This slide indicates some of the measures RAND has stressed in its analysis.* They emphasize minimizing casualties, which is especially important when the stakes are arguably low. Indeed, unless casualties can be minimized, public support for intervention will be problematic.**

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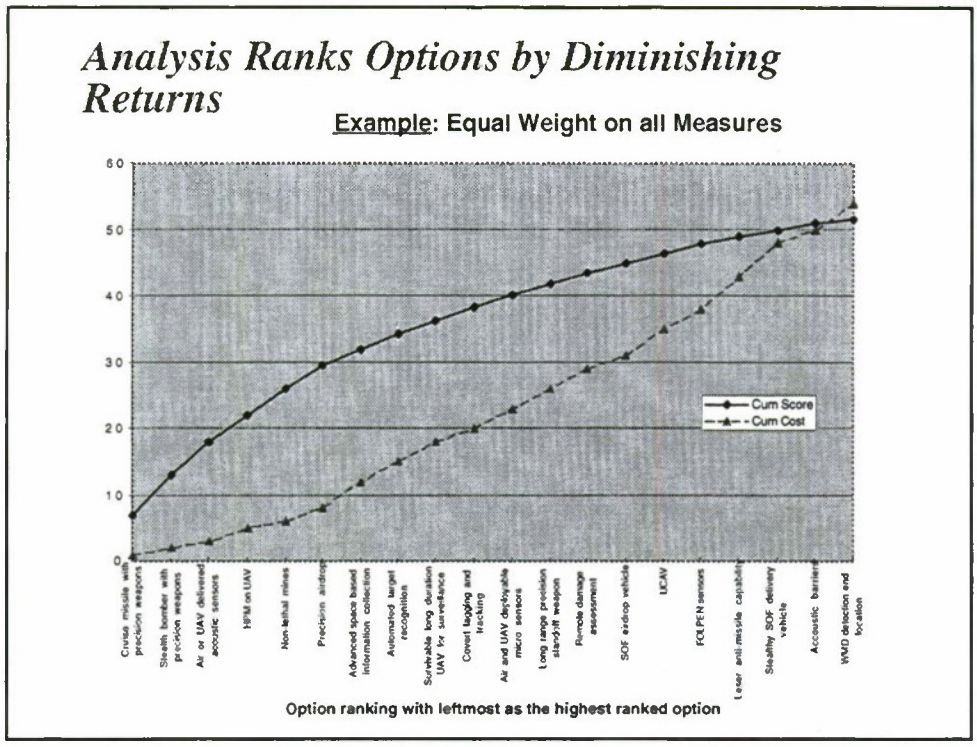
*Most of the comments we make here are based on work from a 1996 Air Force project led by colleague Natalie Crawford. It is currently being documented. Work for the Army is ongoing. Some is reviewed in chapters by Jennifer Taw and Bruce Hoffman, and by Margaret Harrell and Robert Howe, in *New Challenges in Defense Planning: Rethinking How Much Is Enough,* Paul K. Davis (ed.), RAND, 1994. For a sobering empirical depiction of how many forces can be required for stability operations, see the chart by James Quinlivan in that same volume (p. 386).

**For empirical work on public support, see Eric V. Larson, *Casualties and Consensus: the Historical Role of Casualties in Domestic Support for U.S. Military Operations*, RAND, MR-726-RC, 1996.



This slide is not intended to be fully readable, but it illustrates ongoing work to determine the priority with which force-improvement options should be funded (or protected) by considering their contribution to a broad set of measures, and their cost. The approach (building on earlier work by Hillestad) draws on quantitative analysis for estimating how much difference an option makes in a given operation.* It also highlights the crucial importance of the measures and how one weights them. Depending on just how important minimizing casualties is, for example, different improvement measures loom larger. We generate plots of the form shown here. The top curve shows the buildup of subjectively assessed "value" and the lower curve shows the buildup of cost. The highest leverage occurs where the two curves are farthest apart, on the left side. There, value increases rapidly as one funds the improvements, but the improvements cost very little.

Since the results depend fundamentally on the subjective weights assigned to the different objectives (and to other judgments as well), we use a spreadsheet that interactively reranks the options if one changes the weights. Often it turns out that the same improvements look best across a wide range of assumptions.

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*The need to evaluate forces for achieving operational objectives is a key element of objectives-based planning as articulated by colleague Glenn Kent. This, coupled with the interactive ranking we mention here, can be very helpful in setting priorities for both forces and modernization programs.

Illustrative High-Value Items for MOOTW and LRCs

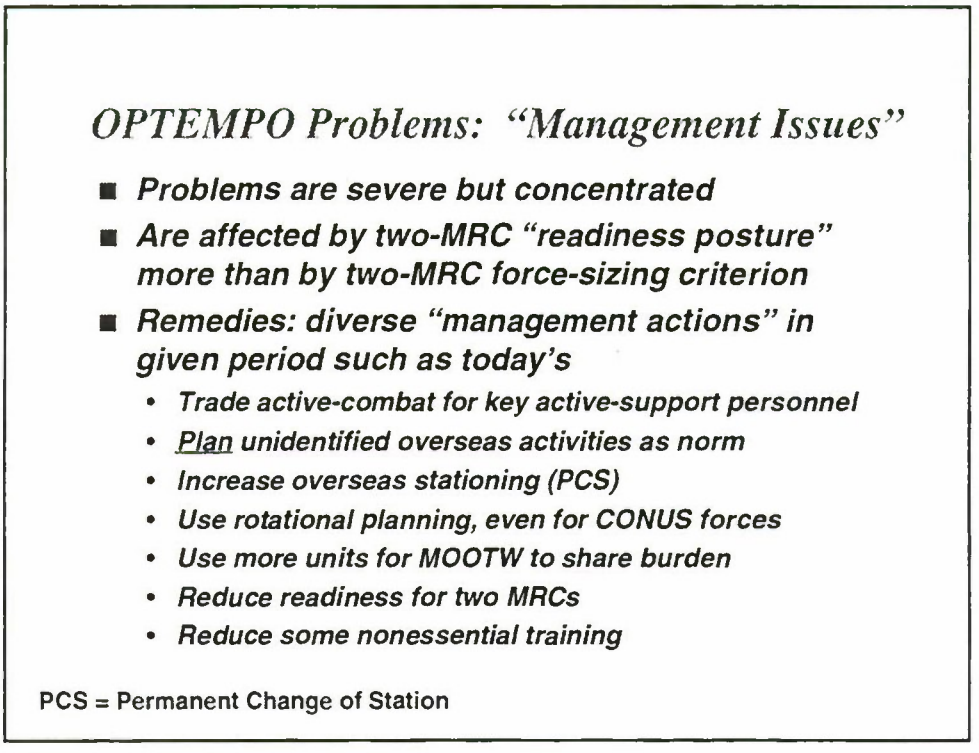
- ***UAVs (e.g., for persistence surveillance)***
  - *Limit manpower commitment, casualties; can be covert*
  - *In future, could perform attacks (e.g., SEAD)*
- ***Stealth aircraft***
  - *Early actions feasible, even prior to SEAD*
  - *Limits casualties, increases covertness*
- ***Nonlethal capabilities and related sensors***
  - *Minimize unintended casualties*

Note: these are also useful in MRCs, but less expensive alternatives then exist

SEAD = Suppression of Enemy Air Defenses

This chart illustrates improvement measures that seem particularly attractive based on RAND analysis done for the Air Force. In particular, much can be done to reduce the risk of casualties while still conducting vigorous operations. Our principal point is that improving capabilities for LRCs and MOOTW is definitely important and can be analyzed for prioritization. It just so happens that many of the improvements could be accomplished within any of the strategic options we discuss later. We saw no need to make improving LRC and MOOTW a strategic *issue*. There is potential consensus that such improvements should be made.

As noted at the bottom of the slide, the capabilities in question could also be quite useful in MRCs. However, they will likely be quite expensive and would therefore be most suitable for short and critical MRC operations rather than something more sustained.



The last cross-cutting topic involves operational and personnel tempo. Current forces are being driven hard with stresses that cause personal difficulties and are likely to affect the Services' ability to retain the best personnel.

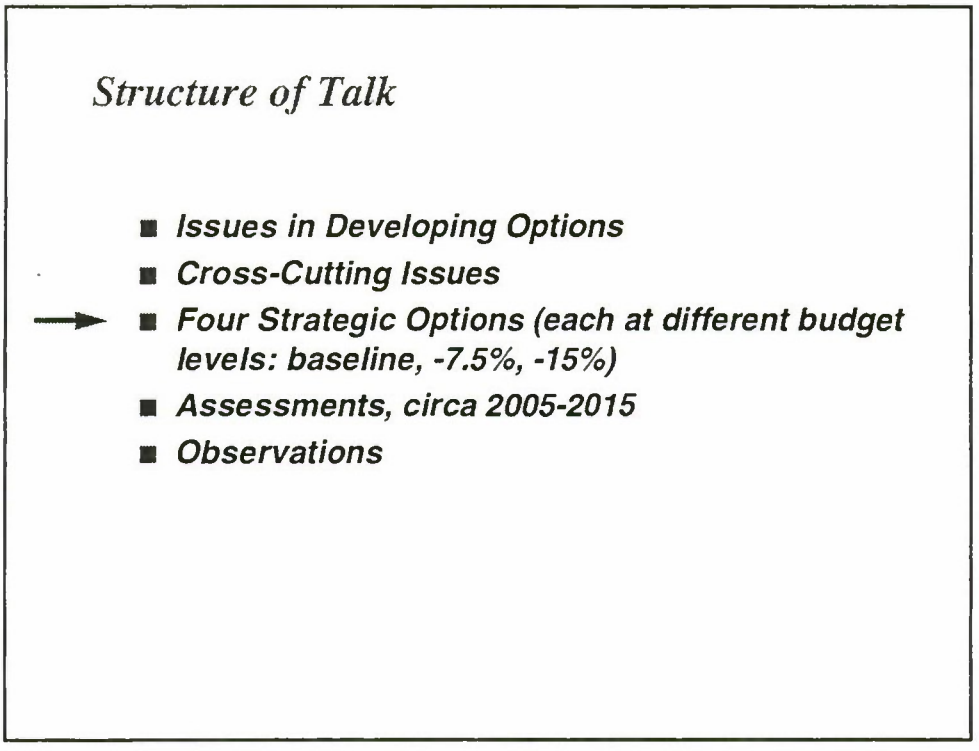
Although the problems are severe, they tend to be concentrated and to be problems of force management rather than a consequence of the force's overall size. We see a variety of possibilities here, but the remedies vary with Service. Briefly:

- Active combat units could be traded away in preference for some critical active support units in constant demand.
- The Army and Air Force could go farther than in the past to *plan* overseas activities, building them into both the budget and into the multi-year schedules of affected personnel. This type of rotational planning and tiered readiness could be used even for some Continental United States (CONUS)-based AF (Air Force) units.
- Permanent overseas stationing could be used in some cases, in preference to TDY (temporary duty) stationing. This would reduce the rotation base requirements.
- The burden for MOOTW could be spread across more units, although some believe that it is sometimes important to use name-recognition units to demonstrate seriousness.

Strategic Options and Their Assessment

That concludes the ground-laying discussion, which perhaps has been persuasive in its claim that the various cross-cutting issues are all important, but need not be highlighted in strategic options. Instead, they should be addressed in any case, and there is potential consensus on how to do so.

Let us now move on to strategic options and their assessment. As mentioned earlier, we focus on dimensions of modernization/recapitalization, engagement, sizing and posture, and budget level.



In what follows we present four options, each with variants corresponding to a baseline budget (roughly $250-$260B), 7.5% less, and 15% less. Our purpose here is to assess robustness under financial uncertainty. This is important because the defense budget is to some extent an exogenous variable. It is unlikely to rise, but it could drop and defense planners should want to have programs that could accommodate gracefully.

Thinking About Budget Assumptions

Uncorrected Budget ($97B)	*Under-Funding ($B) (after cuts of infrastructure)*	*Yearly Loss to Inflation (%)*	*Effective 5-Year Average Budget Relative to Base*
Base	0	0	0
Base	10	0	-4%
Base	0	2.5	-8%
Base	10	2.5	-12%
Base–$5B	10	2.5	-14%
Base	20	0	-8%
Base	20	1.5	-13%

Conclusion: Evaluate plan for cuts of 0 to 15%.

Base: $250-$260B ($ 1997) for the 051 account (TOA).
TOA: Total Obligational Authority

Why look at cuts of 7.5 and 15%? Why those figures?

This slide uses a number of defense-budget scenarios to calculate *effective* 5-year average budgets for the purpose of force planning. It assumes that there will be no real-dollar increase in the budget, but that there may be effective reductions due to (1) explicit reductions, (2) a failure to cut infrastructure enough to compensate for the known underfunding of future procurement, and (3) implicit reductions in the form of a constant budget in nominal dollars, i.e., without corrections for what we assume is a 2.5% inflation. On the one hand, all of these scenarios may seem to be ho-humish—certainly in comparison with the draconian-cut scenarios proposed earlier in the decade (to what would currently be a budget level of roughly $180B). However, the salami slicing adds up. As the last column indicates, a combination of the modest cuts could be equivalent over five years to cutting the budget by as much as 14% on average. If efforts to eliminate the deficit prove difficult, then even larger cuts are plausible early in the next decade.* Economically, of course, the United States could readily afford to maintain the defense budget at constant inflation-adjusted levels, or even to increase the budget somewhat. Currently, however, that seems unlikely. Taking all of this together, looking at the consequences of cuts in the range of 7.5 and 15% appears prudent.

*Until recently, projections of the deficit showed huge increases around the year 2002. However, the situation is now more ambiguous because national growth and federal revenues have been strong, and because a correction in the cost-of-living calculation appears justifiable economically and would significantly reduce the rise of the deficit.

Option 1: Pragmatic Evolution

- ***Broaden rationale for defense posture***
- ***Continue policy of engagement***
- ***Improve management of operational tempos and active/reserve mix***
- ***At base funding level, maintain structure and procure new systems (F-22, V-22, SC-21, Comanche,...)***
- ***Evolve units and doctrine***
- ***Vigorously reengineer infrastructure to deal with tight or shrinking budget***

The first option is called "Pragmatic Evolution." It is intended to be a sensible extension of what the DoD has been doing, well beyond the future years defense plan (FYDP) period. Even such an extension, however, would involve new elements. Certainly, the rationale for the force would need to change. As mentioned earlier, the two-MRC framework is not a good standalone. The forces would also change, as new systems such as the F-22 enter the force and the Services evolve their units and doctrine.

Most of the items here are self-explanatory, but note particularly the last item. We *assume* in all options, including this one, vigorous efforts to reengineer infrastructure. Whether $20B-$30B/ year will be saved for application to procurement, as some recent studies suggests may be possible, remains to be seen. We remain deeply skeptical in the near term.

Now, if budget cuts were significant (even 7.5%, but certainly 15%), some goals of this option would be very difficult to achieve: Force structure would shrink and procurement would be stretched or even curtailed. Thus, the low-budget version of this option might be nothing at all like what those favoring an evolutionary approach in 1997 have in mind.

Option 2: Refocused Evolution

- ***As in Option One except for priority, at all budget levels, on addressing Achilles' heels problems with new-technology units and weapons—e.g.,***
  - *Rapidly deployable mobile-missile "regiment" or battalion (ATACMS/BAT)*
  - *Arsenal ships and other missile ships*
  - *Prepositioned (land or sea) attack helicopters*
  - *Forward-deployed mine-clearing capabilities*
  - *Aggressive counter-WMD operations*
  - *On D-Day, high-confidence C^3I ; air and missile defense; and SEAD*
  - *Enhanced-capability first brigade*
- ***Would assure assimilation and refinement of new concepts***

BAT = Brilliant Anti-Tank munition
C^3I = Command, Control, Communications and Intelligence

Option 2 is similar to Option 1 in most respects. However, it has two important differences. The first is elevating the priority, at all budget levels, of solving or mitigating particular Achilles' heels problems related to major contingencies, particularly difficulties associated with stopping the invader quickly in scenarios with short warning, initial access problems, opposed entry, and WMD. The second is that the option mandates that these problems will be addressed by exploiting new-technology units and weapons, thereby assuring that they become "real" and part of the operational force, where they would be tested and where doctrine would be developed and refined. The kinds of units and weapons we have in mind here are those shown. The first three involve precision weapons that could be employed very early in war. The others are also relevant to early-in-conflict issues, especially in short-warning cases. None of these will happen "naturally"—that is, without special attention from DoD and Service leadership. *

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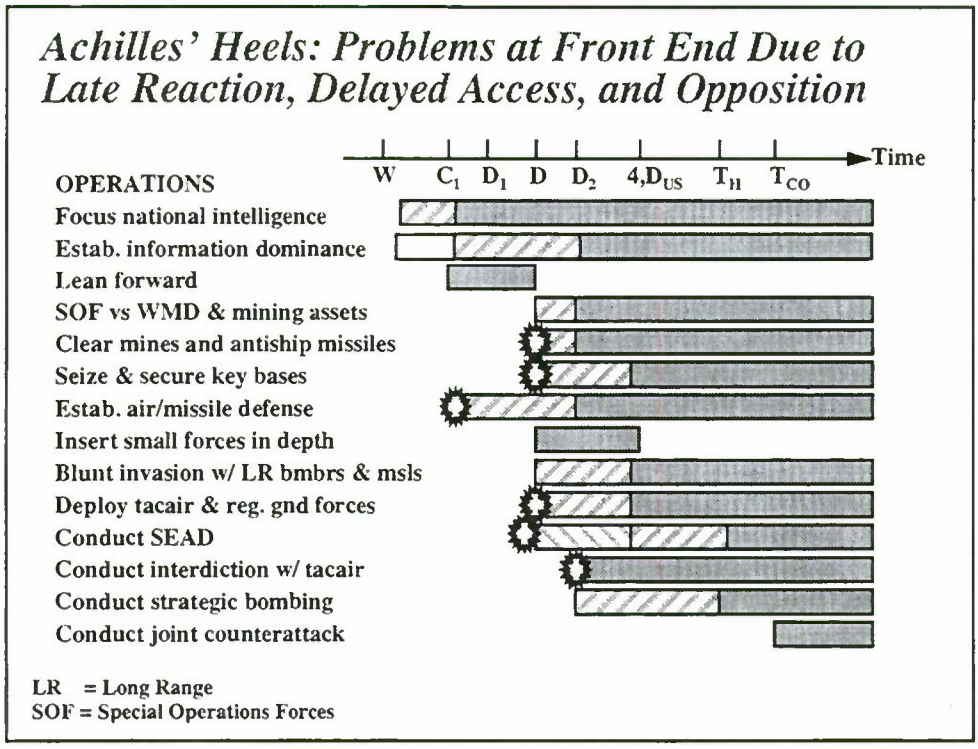
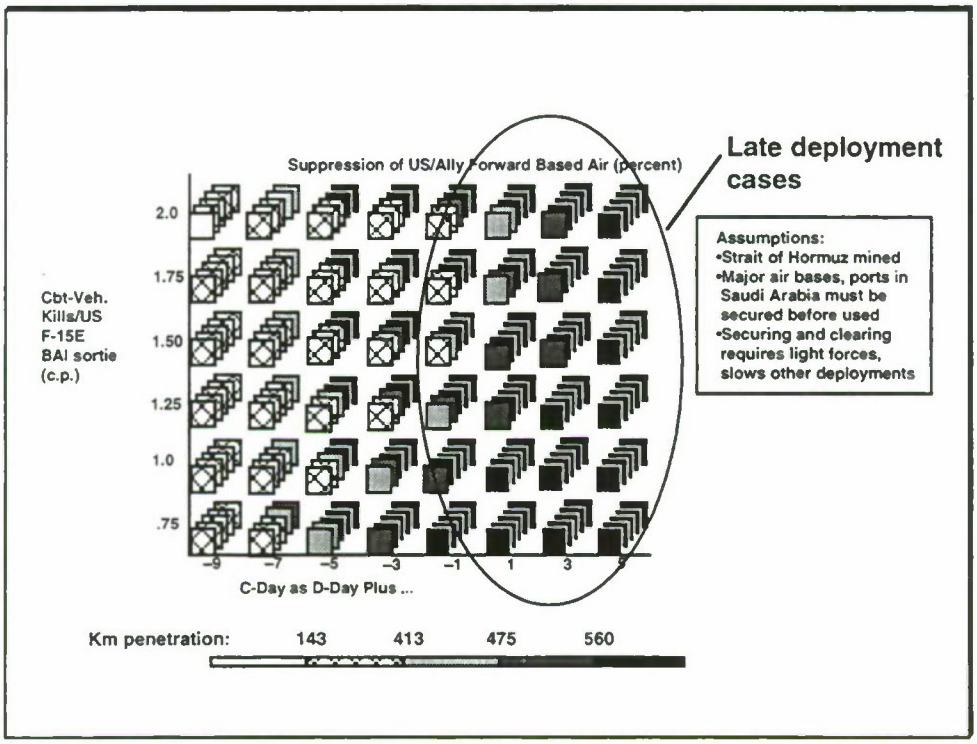
*Some of the themes appearing here emerged originally from a broad exploration of capabilities for contingencies described in Paul K. Davis, Richard Hillestad, and Natalie Crawford, "Capabilities for Major Regional Contingencies," in David Ochmanek and Zalmay Khalilzad (eds.), *Strategic Appraisal*, 1997. Others are motivated in a forthcoming work by Davis et al. on the potential problems, and possible measures to mitigate them, of access constraints and Persian Gulf contingencies. We mention this work in part to emphasize that many of the higher level judgments made in this briefing derive from extensive analysis.



This slide illustrates Achilles' heels problems. It depicts a campaign as having a large number of operations, many of which must be accomplished in parallel, but some of which *must* be accomplished early if subsequent operations are to succeed. For example, applying America's powerful air forces to destroy an invading army may require seizing and securing key air bases, establishing air and missile defenses, and so on. Because U.S. ability to accomplish such critical-node operations early is in doubt, we refer to them as Achilles' heels issues. The items highlighted happen to relate to access problems, but others are equally troublesome, especially those involving WMD. Other Achilles' heels involve advanced air defenses that might not be easy to suppress and, of course, missile attacks with weapons of mass destruction.



This slide, drawn from a large analysis effort, illustrates the impact of Achilles' heel problems in Southwest Asia. The scenario involves Iraq invading Kuwait and Saudi Arabia, with Iraq and possibly Iran causing troubles in the Strait of Hormuz and inside Saudi Arabia—enough so that deployment into airbases and ports is opposed. In this class of cases, the operational strategy would have to be changed substantially. Light forces would seize and secure bases, minesweeping would be necessary, and the full mass of U.S. Central Command (USCENTCOM)'s counter-threat deployment, including Air Force squadrons, would have to slow down. The display shows results of about 500 cases that vary with (1) when deployment begins relative to D-Day (from D-9 to D+ 5), (2) how many kills per sortie are achieved in good circumstances by F-15E-class aircraft (y axis), and (3) what percentage of the nominal sortie-generation rate for land-based aircraft is suppressed (e.g., by chemical attacks, or by air defenses that require more careful attack planning and escorts) (the z axis into the slide). Red (or black) indicates a bad outcome for a given simulation—Iraqi penetration to the critical coastal oil facilities and ports of Saudi Arabia. We see a large plausible domain of red outcomes (most of the cells circled). Thus, U.S. contingency capabilities for short-warning or late-reaction SWA scenarios score as very bad. This will be used later in the briefing as well.

The highlighted problems could be mitigated by information-age options assuring the presence on D-Day of long-range precision strike. The options would have little effect on overall force structure, but rather would involve, e.g., extended-range tactical missile system (TACMS) with the brilliant antiarmor technology (BAT) munition (launched from prepositioned ground forces or from ships already within range before the Strait was closed), long-range bombers with sensor-fuzed munitions, or prepositioned attack helicopters. There are wars in which such capabilities would definitely not be sufficient, but the top-priority problem is, arguably, to deter the classic armored invasions that Iraq can conduct without new military forces and doctrine. Without assured D-Day capability, that deterrence may not be adequate.

In any case, Option 2 would put a high priority on addressing the Achilles' heels problems *and* doing so preferentially with units that might—if they prove effective—be multiplied in subsequent years as part of the force's evolution into a next-century force.

Option 3: Reengineering Forces and Doctrine

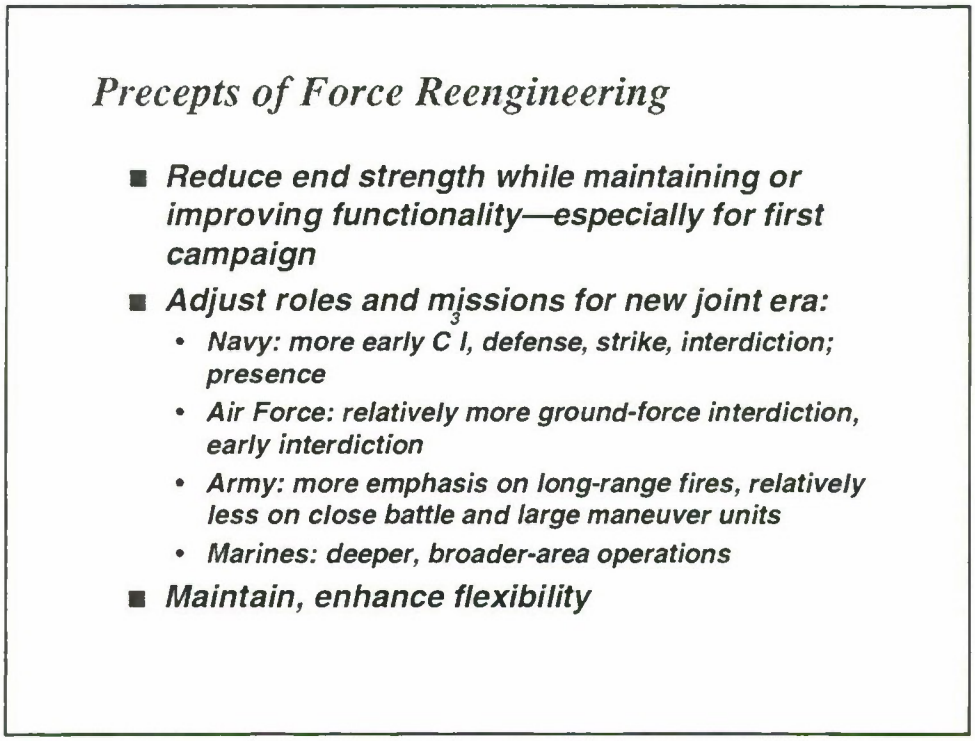
- ***Create new "major formations" to do as much or more, but with fewer people*** Change the "tokens"
- ***Exploit likely U.S. superiority of info-age:***
  - *Information dominance*
  - *Long-range precision strike*
  - *Precision logistics*
  - *(and reduced vulnerabilities)*
- ***Emphasize environment-shaping***
- ***Overseas presence; engagement...***
- ***Coalition building***
- ***Depend on reserves for long wars***
- ***Give priority to Achilles' heels problems***
- ***Pay for cuts with infrastructure <u>and</u> end strength***

Option 3 is less tentative about modernization. It takes the view that for many reasons—reduced end strength to cut costs, higher effectiveness, reduced vulnerability, and strategic adaptiveness for the future—the United States should be reengineering its forces. As with other reengineering activities, the idea here is not to save money by reducing objectives, but instead to do even more—and to do so at lower cost by exploiting technology and organizational possibilities. A key element here is to "change the tokens," creating new formations altogether.

As the next bullet indicates, Option 3 is about "doing" the information-age measures that have been so widely talked about—and doing them faster than would happen currently.

Reengineering should include rebalancing to achieve new objectives, not just traditional ones. Option 3 is sensitive to the old, but newly appreciated, missions of environment-shaping and strategic adaptiveness. Thus, it seeks to assure, *at all budget levels*, a substantial naval presence (but not necessarily with carrier battle groups). It also maintains forward deployed ground and air-force units, albeit with trimming at the margins made possible by enhancing the capability of smaller units. It would be a very "engaged" option and would seek to build and strengthen coalitions and the web of allied relations, both to influence and hedge against geopolitical change. Consistent with strategic adaptiveness, Option 3 is philosophically oriented toward hedging. It recognizes that the high-tech precision guided munition (PGM)-oriented capabilities are much less valuable in some contingencies than others, and that there is no guarantee that the United States will be able to avoid the long and "dirty" wars in which there has never been a good substitute for large numbers of infantry on the ground. Thus, Option 3 tries to maintain sizable traditional mechanized capability, not only in the active forces, but also in reserves as a hedge against "bad wars." Reengineering need not mean excessive reliance on long-range precision fires.

At all budget levels, Option 3 gives priority to Achilles' heels problems and environment-shaping. At lower budget levels especially, it pays for the reengineering by reducing end strength. Its intention is to move toward smaller units with capabilities (in peacetime and in "good wars") equal to or better than those of traditional units. At lower budget levels, however, it might be impossible to hedge by maintaining many traditional ground forces or air forces, and procurement of advanced systems would stretch.



Even in an overview we need greater resolution to understand the options. This slide suggests some of the guiding precepts under Option 3. Note that, on a *relative* basis, at least, there are changes in roles and missions.

Illustrative Reengineered Army Structure, 2010

Active Army organized for brigade operations in wartime corps and joint task forces (JTFs), with reserves

- *2-3 modern-mobile-missile / infantry brigades (MMBs)*
- *2-3 armored cavalry regiments (ACRs)*
- *2-3 air-cavalry combat brigades (ACCBs)*
- *2-3 air-mobile / air-assault brigades*
- *2-3 enhanced-capability rapid-deployment brigades*
- *4-6 mixed-mechanized infantry brigades (smaller)*

Fewer units at lower budget levels

- *6-12 mechanized brigades at 75% fill, with high-readiness reserves for roundout*

- *2 RISTA units (with links to national systems)*
- *2 theater-protection brigades (air defense, theater missile defense (TMD), Chemical/biological warfare (CW/BW), rear-area security...)*

With trepidation we present in the next few charts *illustrative* Service structures in 2010 under Option 3. The intention is to convey the "sense" of the option without implying that the structures shown are the "right" way to implement the options. It will take years of experimentation by Service innovators to know what is best.

Our strawman pursues the idea that military hierarchies can be delayered to some extent, and that information can be available wherever needed (a "flatter" structure for information). It assumes operations built around corps and brigades, with brigades as "building blocks" for diverse JTFs.** Included in the set would be "brigades" (or smaller units) built to exploit the capabilities of long-range precision fire from a next-generation TACMS/BAT. Such units should be rapidly deployable by air and able to protect themselves. Other building-block units would be similar to current-day armored cavalry regiments; attack-helicopter units; air-mobile/air-assault units; enhanced rapid-deployment brigades (i.e., descendants of the 82nd airborne, but with extensive sensors, indirect precision fire out to perhaps 20 km, and enhanced mobility); and numerous mechanized units akin to a trimmed down and modernized version of today's. It would also have specialized support units for reconnaissance, intelligence, surveillance, tracking, and acquisition (RISTA) and theater protection.

We show a range of numbers for each unit, because we considered different budget levels. At low budget levels (a 15% cut), this Army might have, e.g, 1/3 fewer brigades than the current force. Even at higher budget levels, this Army would have lower end strength than today's, because the units would, on average, be lighter and their support slices smaller than today's—in part because *sustained* armored conflict is unlikely.

** The Army's Training and Doctrine Command (TRADOC) is examining a wide range of advanced concepts. One interesting concept for cutting-edge units is "Task Force Griffin," developed for the 1996 Defense Science Board Summer Study (described in Vol. 2 of *Tactics and Technology for 21st Century Military Superiority,* 1997). Marines are experimenting with a number of next-generation concepts in the Sea Dragon effort.

Illustrative Reengineered Navy, 2010

- *13-15 Contingency Capable Battle Groups (CCBGs)*
- *8-12 Thinned-down Carrier Battle Groups (CVBGs) with better munitions*
- *3-7 Aegis/missile-ship CCSAGs*
  - *Key role in early air defense, missile defense, JTF C^{3}I, strike, and interdiction*
  - *Reinforced by CVBGs under strategic warning*
- *2-3 MEFs*
- *35-50 attack submarines (SSNs)*
- *0-3 SSNs capable of launching Marine detachments*
- *1-2 Home ports (Japan and Med?)*
- *Blue-gold crewing*
- *"Smart-ship" methods reducing manning*

Fewer units at lower budget levels

Our illustrative Navy is designed to assure the capability for meaningful forward presence and associated environment-shaping, even at reduced budget levels if necessary. It is structured around "contingency capable battle groups," or CCBGs, which include CVBGs, and some "contingency capable surface-action groups" or CCSAGS built around DDG-51s, the Aegis system, Arsenal ships, and missiles on other surface ships having vertical-launch capabilities. These missiles could be extended-range TACMS or Tomahawks. They would be equipped with anti-armor munitions such as BAT, munitions for suppressing air defenses, and other weapons.

At higher budget levels, the number of CCBGs would be greater than the number of current CVBGs to provide for 100% coverage in East Asia, Southwest Asia, and Southern Europe. At lower budget levels, there would be fewer CVBGs and more of the less expensive CCSAGs, which would have a critical role early in crisis.

In addition, this Navy would have MEFs, SSNs, and possibly some SSNs (or strategic missile submarines [SSBNs]) reconfigured for launching Marines. At the lower budget levels, it would be important to examine cost-saving mechanisms such as additional home porting and blue-gold crewing.

At all budget levels we assume reduced overall manning as "smart-ship" methods being tested by the Navy are introduced into the force.

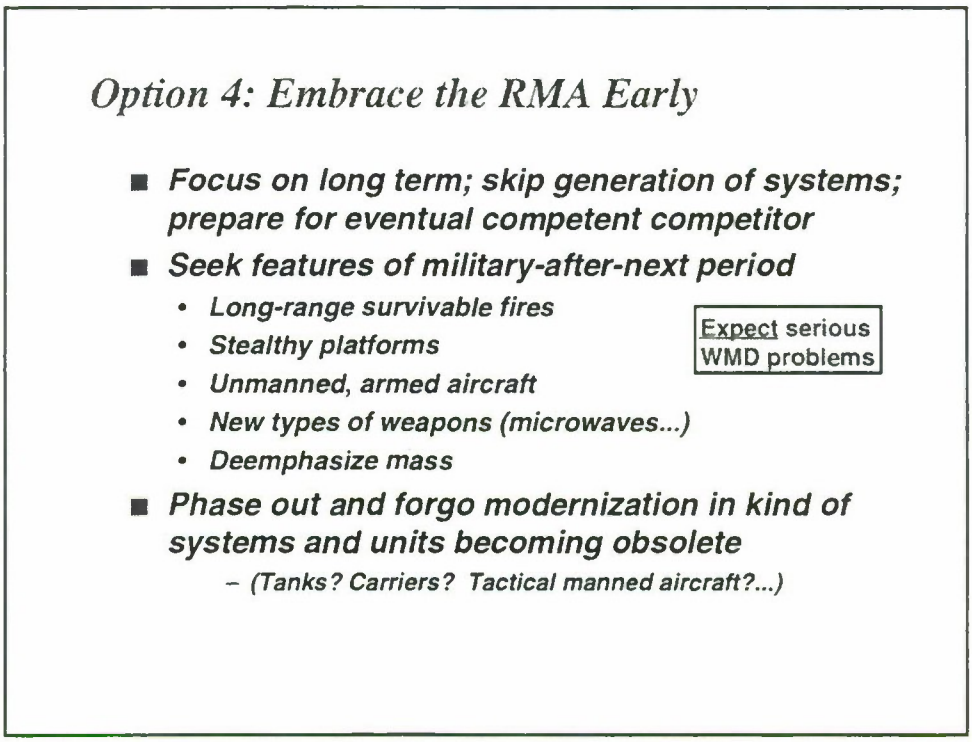
Again, because of the priority on environment-shaping, this Navy *always*—at all budget levels—maintains at least the level of overseas presence the United States currently enjoys. However, the tokens change.

Illustrative Reengineered Air Force, 2010

- *Emphasis on platform productivity, not structure*
  - *High crew ratios and sortie rates in wartime*
  - *More, smarter, smaller, precision weapons*
  - *More all-weather capability*
  - *Enhanced-capability long-range bombers*
- *Full-size squadrons (24 ac) to reduce overhead*
- *Task-organized air expeditionary forces (AEFs)*
- *Relatively less emphasis on close air support (CAS), air-to-air*
- *40-60 tactical fighter wing (TFW) squadrons; 100 bombers*
  - *Half to two-thirds active*
  - *Some permanently stationed overseas (PCS)*
- *"Bomber" support to Navy for surveilling, protecting, ocean areas if needed*
- *Micro-reengineering ("unspecified savings")*

The key to reengineering the Air Force seems to be emphasizing platform productivity rather than structure in a budget crunch. There are many ways to increase the expected number of sorties per day and kills per sortie using modern technology and different personnel policies. It is also possible to reduce costs by increasing the average size of squadrons (related to BRAC), exploiting the new air-expeditionary-force concepts, and, of course, trimming the number of active (and perhaps reserve) squadrons. It seems likely that the Air Force's responses to a reduced budget level would have to be fewer wings and squadrons, plus changes at the micro level. Increased use of UAVs might be critical, because quality cannot always compensate for quantity, especially for missions requiring continual operations such as various RISTA activities.

The Air Force's future procurement is underfunded. Thus, some of the measures suggested here may be necessary in any case, in addition to savage reduction of infrastructure if politically feasible. At significantly reduced budget levels (the -15% case), there would be extremely painful tradeoffs between squadrons and modernization (e.g., the F-22, which we assume would be stretched substantially rather than being halted).



Finally, let us consider Option 4. This also involves reengineering, but it is more radical in its embrace of the revolution in military affairs. Its focus is on the longer term, with a willingness to skip a generation of procurement rather than replacing current systems with systems that may be obsolete when and if a competent competitor emerges.*

Option 4 has many features in common with Option 3, which include exploitation of information technology and precision strike. However, Option 4 is more pessimistic about future adversaries such as the "high-end regional adversary" that has procured long-range air-to-air missiles and advanced, "double-digit" surface-to-air missiles (SAMs) on the open market, and that has developed or purchased relatively accurate ballistic missiles, area munitions, WMD, and UAVs. None of these would be competitive with U.S. analogues, but they could endanger tactical air forces and critical command-and-control aircraft (Joint Surveillance Target Attack Radar System [JSTARS], AWACS) based within hundreds of kilometers of the missiles, large ground formations, and even carrier battle groups. By and large, Option 4 favors moving to very long-range systems, increasing stealth technology for aircraft and ships, introducing new weapons, and deemphasizing manned aircraft. It would explicitly forgo replacing current weapon systems and platforms with modernized versions if they were not going to be survivable against the envisioned high-end regional threat or the competent competitor of 2015 or so.**

Because there may be serious threats to naval forces by this period, Option 4 also sees value in maintaining a substantial number of SSNs and developing new versions of submarines as assault platforms.

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*A different interpretation of the RMA story is that we should be less concerned with emergence of an advanced competitor than with appreciating the luxury of a breathing spell during which experiments with advanced concepts and weapons can be tested. Some of these may prove useful in MOOTW and LRCs as well as MRCs. For the purposes of this briefing, we have chosen to emphasize the advanced-threat problem.

**For an account of what next-century threats may be like, see the report of the 1995 Defense Science Summer Study. See also Jeffery Barnett, *Future War,* Air University Press, Maxwell Air Force Base, AL, 1996.

RMA-A and RMA-B

- ***RMA-A (Option 3)***
  - ***Painful organizational and doctrinal changes***
  - ***Within-grasp systems: J-STARS, UAVs, V-22s, Comanche, BAT, longer-range missiles, sensor-fuzed munitions, ...***
- ***RMA-B (Option 4)***
  - ***More pessimistic assessment of long-term utility of current types of platforms (CVBGs, tactical aircraft, armored forces...)***
  - ***More ambitious technological assumptions: dependence on armed UAVs, subs, ...[not maneuver units]***
  - ***Radical organizational and doctrinal changes, including elimination of "dinosaurs"***

This slide compares Options 3 and 4 in terms of the RMA. In our view, there are two distinct facets of the RMA: the need for dramatic changes in organization and doctrine using technology "within our grasp" (most of it not slated to enter the force until 2005-2010), and the possible need to shift the very nature of warfighting to longer range and to a style of operations better suited perhaps to WMD.

Option 4 is not intended as a strawman, but because it involves a long-range vision and a pessimism difficult to sustain when visible adversaries are in dire straits economically and far behind the United States militarily, it is difficult to define the option so that it looks sensible for 2010. Still, the option represents an important set of beliefs, and we will attempt to give it its due later in the briefing, when we consider briefly an assessment for the period of 2015-2020.*

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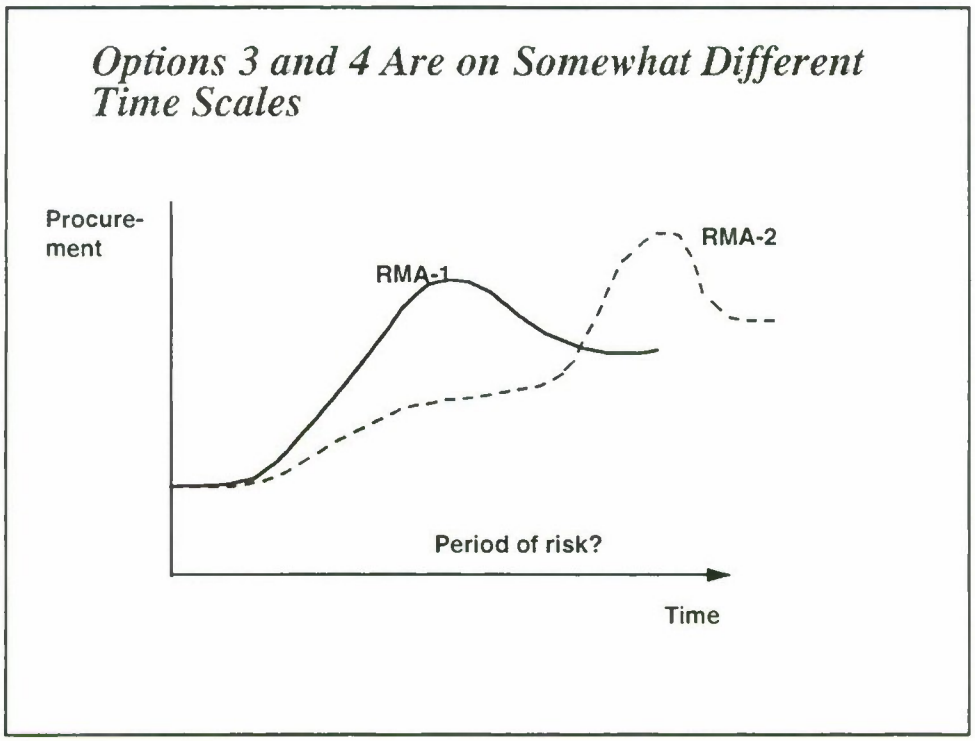
*Some argue that Option 4 has many contradictions, and that those concerned about a future competent competitor in the era 2010-2020 should support procurement of systems such as the F-22, JSF, Comanche, and so on because those are the systems that would plausibly be available. Further, if we literally skipped a generation, it would mean having to procure even more of the undefined new systems when the time came. We do not attempt to resolve this issue here.



This slide makes the point that Option 4 would involve less procurement in the mid-term, while system concepts are developed that could be turned into procurable systems only late in the next decade at best. This would mean that there might be a period of increased risk during which U.S. forces would be unmodernized.

What the Options Emphasize

Dimension	Option 1	Option 2	Option 3	Option 4
Pace of modern.	*/**	**	***	* / *****
Engagement/ allies	**	****	****	**
Force size	*****	****	***	**
Conting. cap.	***	*****	*****	*****
Env. shaping	***	****	*****	**
Strat. adapt.	**	***	****	*****

Many variants are possible

Here we summarize the options along various dimensions.

It is difficult to characterize Option 1, because—even with no change in strategy and policy—the program would be different in the next ten years than in the last five. A man from Mars, however, would characterize the baseline as involving little modernization to date, plus the unfunded promise of more later. Option 2 would move a bit more hastily, but only on selected problems and on a small scale. Options 3 and 4 are modernization oriented, but on different time scales.

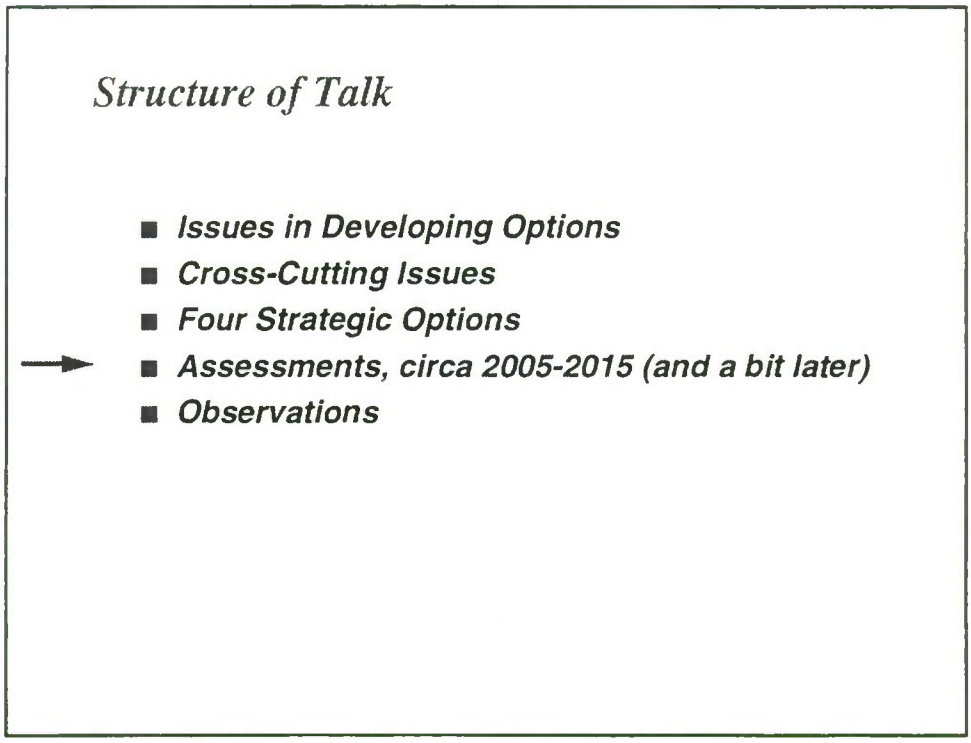
One can quarrel about how to characterize the options in terms of engagement and connecting with allies, but these matters are explicitly emphasized in Options 2 and 3, and deemphasized in Option 4.

Force size (as measured here by end strength) decreases with the degree to which the forces are radically reengineered.

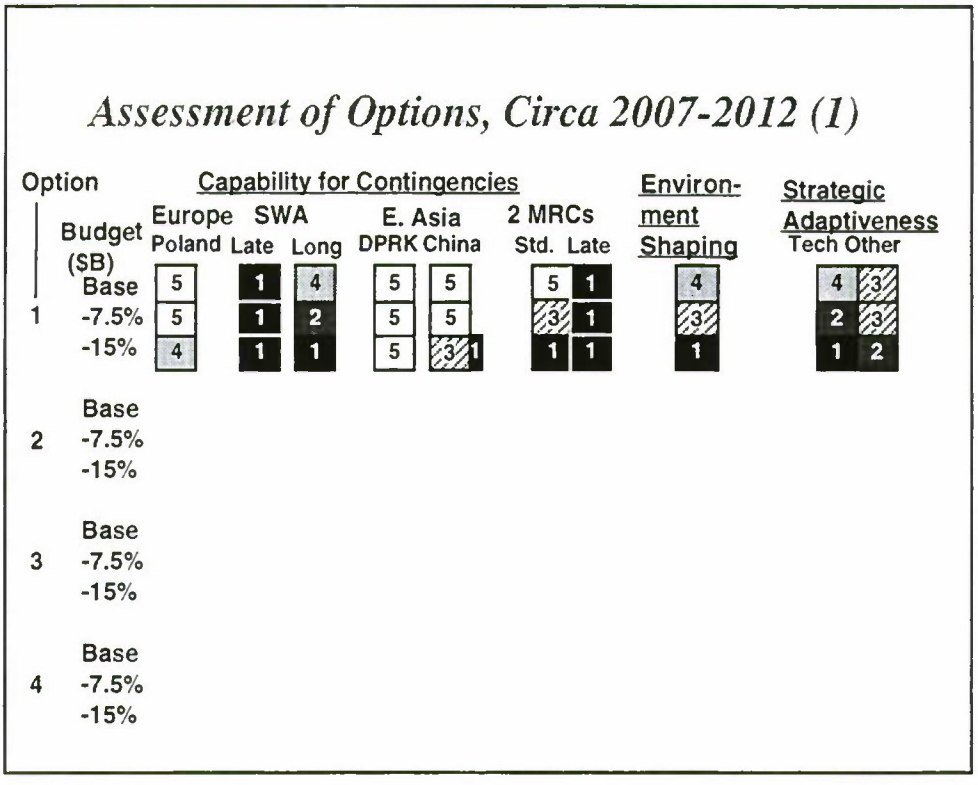
All of the options are concerned with contingency capabilities, environment-shaping, and strategic adaptiveness. However, Option 3 gives portfolio balance a high priority and, at least at higher budget levels, Option 2 would probably do better than Option 1. Option 3, of course, is the quintessential example of an option seeking to maximize strategic adaptiveness. As we shall see, however, there are issues in this regard.

Are the Options Cooked?

Anyone who has developed broad strategic options for discussion will appreciate that there is a good deal of arbitrariness involved and that the purpose is often not to display options for policymakers to choose among literally, but rather to present options that bring out particular issues and choices. To some extent, these options play the role of scenarios. In the real world, the course of action taken could very well include features of *all* the options.



With this background, let us now consider what assessments of the options might look like, primarily for the era 2005-2015, and then, briefly, for a later period. What follows reflects our own recent analysis, which drew heavily on modeling and wargaming for evaluation of contingency capabilities and on structured subjective methods for evaluation of environment-shaping and strategic adaptiveness. The assessments can be understood on the basis of a relatively few principles. These can be questioned or changed without extensive analysis. That is, we attempted to base the assessments on relatively transparent reductionist principles so that they did not depend on the intricacies of complex computer simulations or subjective-judgment spreadsheets. Many of the individual assessments are clearly uncertain on the margin, but we believe the trends we show are valid.



The following slides use the same format. Column headings indicate different assessment measures. Rows represent the different options. Each option is evaluated for three budget levels: the baseline of roughly $250-260B/year (there are ambiguities because of differences between the President's budget and Congress' budget), and levels 7.5 and 15% smaller. Red (1) is very bad, orange (2) is bad, yellow (3) is marginal, chartreuse (4) is good, and green (5) is very good.*

The measures shown here strike a balance between richness and reductionism. The first seven columns of assessments deal with contingency capabilities. The first evaluates ability to deter a hypothetical invasion of Poland by Russia, assuming that Poland maintains a sizable and competent army and that the United States is contributing only about half of what current NATO nations need for the conflict. This column, then, represents our assessment for Europe. The next two columns deal with SWA. Although many contingencies are imaginable, we focused on threats involving Iraq, with some troublemaking by Iran. In these columns we evaluated not for deterrence, but for high-confidence warfighting success even in bad cases. We evaluated the SWA capabilities for two difficult classes of scenario: one in which the U.S. reacts late and encounters numerous problems along the lines discussed earlier in the briefing, and the class of cases in which reaction is so late that the war is about retaking the peninsula. The two columns for Asia are represented by assessments for defense of Korea, first for defense in 2010 against a persistent North Korea and, second, for defense by a unified Korea against China. In evaluating the hypothetical Chinese threat, we again adopted modest standards. We assumed that Korea maintains a sizable and competent army, reasonable use of warning, and the like. After all, there *is no Chinese threat* at present, and there may never be one. Thus, the assessment is much like a balance assessment, although we used wargaming and simulation methods. Finally, we show two columns for two-MRC cases. The first column assumes two "modest-difficulty" MRCs; the second assumes that at least one of them (SWA) involves the same problems as in the late-reaction SWA column. Its score is no better than the result for SWA. It can be worse if total force structure is too low to support counteroffensives in two theaters (i.e., less than roughly 10 divisions).

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*Very bad (red) does not imply losing the war ultimately, but rather, e.g., losing important territory termporarily and having to conduct difficult counteroffesnives over a long period with significant losses.

The next column deals with environment-shaping. The score shown is a weighted subjective appraisal of whether instruments such as overseas presence, regional alliances or coalitions, military aid and education, and forces-in-being are sufficient to underwrite U.S. environment-shaping objectives. We should break this column down into regions, but we have simplified here.*

The last two columns deal with strategic adaptiveness, by which we mean the ability, in 2010, to change force structure and posture readily if needed. We have two columns because the adaptations might be of a sort well suited to high-technology forces or they might be of a sort requiring large armies, flexibility in bases and alliances, or a different kind of technology than that on which the United States has banked. Thus, this column is an indicator of risk in the RMA approach.

Option 1 fares well at baseline budget levels *except* for the Achilles' heels problems associated with late reaction. It fares badly at lower budget levels. This is seen best in the two-MRC columns because, even with cuts, the United States should be able to handle an Iraq, North Korea, or some other regional state without much difficulty in a single-MRC case in which there is sufficient warning, reasonable allies, and so on. Two MRC cases (or an MRC simultaneous with an LRC and some MOOTW), however, are quite another matter.

For this reason, environment-shaping also looks bad at lower budget levels: Overseas presence would be reduced significantly, especially the expensive naval presence. Further, many exciting innovations by the Services would be early victims of the budget ax. And procurement of advanced systems (Comanche, V-22, F-22, etc.) would be badly cut. Some of the systems would probably be canceled. This would reduce strategic adaptiveness.

As a footnote here, the red "sliver" in the China column is a reminder that more taxing scenarios requiring large numbers of ground forces would cause trouble, especially at low budget levels when the Army and Air Force would be much smaller.

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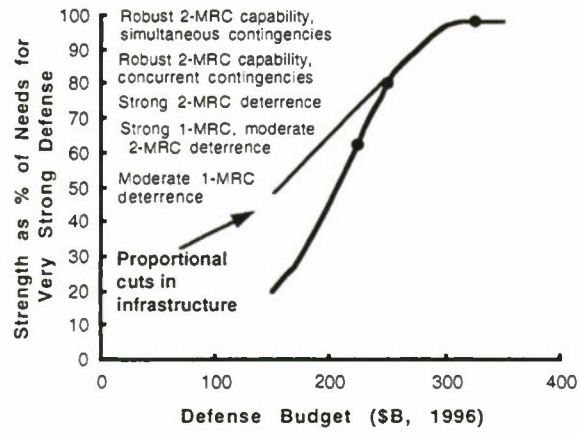
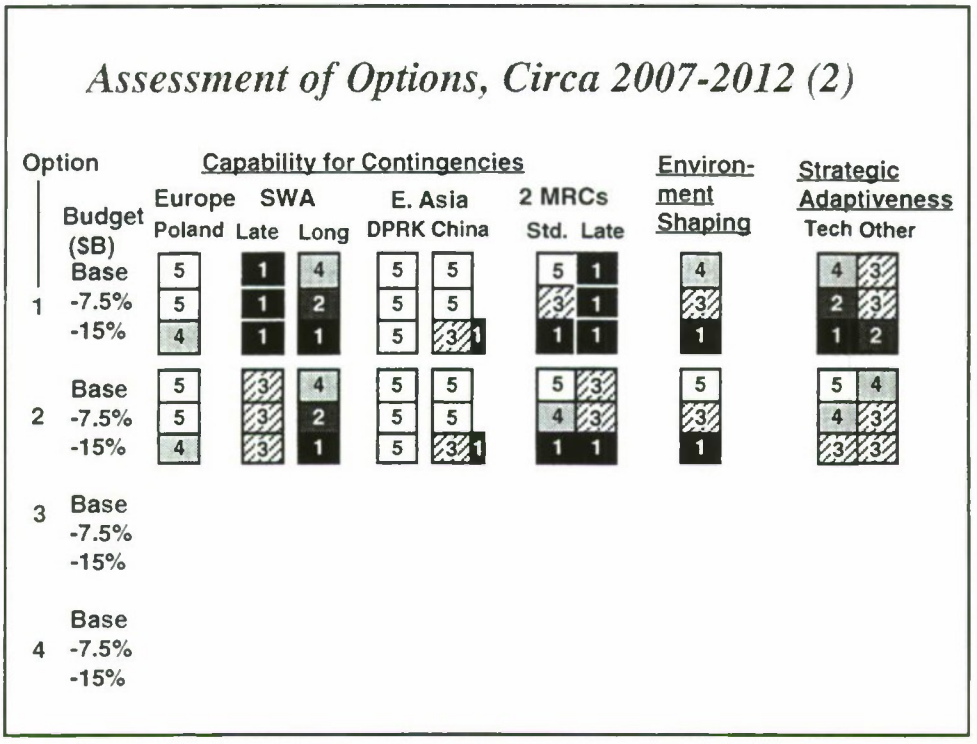
*The full methodology for the portfolio management approach, including that for making the subjective judgments, is being developed and documented currently. A principal feature is making it easy for users to change objectives, measures, assumptions, and portfolio weights.

Without Reengineering, Capabilities Will Drop Precipitously with Budget



This slide elaborates on the point that without reengineering, force capabilities are likely to drop precipitously with budget cuts. Precisely how fast they would drop would depend on success in cutting into infrastructure and support forces. Recall that substantial cuts are already assumed in the baseline when we give Options One and Two credit for planned modernization. That is, the baseline assumes major infrastructure cuts to cover the underfunding of procurement.

The dark black line reflects empirical experience and is probably realistic in the absence of reengineering. The points on which it is based reflect assessments for the late-Cold-War budget, the current budget, and a budget reduced by roughly 15%. Our characterization of the latter is consistent with the 1995 Brookings study.



Our evaluation of Option 2 is largely similar to that of Option 1, with the principal differences being in the "Late" column for SWA and the two-MRC case. By definition, Option 2 addresses the Achilles' heels problems. In our analysis, it could do a good deal at low cost (perhaps $1B/year). In particular, halting an invading mechanized army in the desert is not a daunting task with advanced technology and some warning. However, we evaluate the results as yellow rather than green because some of the problems in the column denoted "Late" involve less-than-capable regional allies and WMD, which may not be dealt with readily. Also, how well precision strike would work in a sudden intense contingency remains an uncertainty.*

We give Option 2 a higher score for environment-shaping at the baseline budget level because, if we have improved contingency capabilities and fewer Achilles' heels, that fact should help to impress our regional allies and further encourage them to cooperate with and count on the United States, rather than attempting to placate their neighbors. At reduced budget levels, however, overseas presence would be reduced and there would be a general perception of an across-the-board drop in U.S. capabilities and likely willingness to engage in regional wars. After all, at reduced budget levels, the United States would have enough forces to reliably engage in at most only one moderately stressful MRC. It would not engage at all without strong reasons.

Option 2 scores better than Option 1 for strategic adaptiveness because it is at least laying the doctrinal and weapon-system groundwork for next-generation forces if the high-tech image is correct. That is, if a threat emerged, capabilities built on a modest basis under Option 2 could be greatly expanded. It might also help with the "other" (non-tech) column of strategic adaptiveness: If new high-tech forces can be used for a few critical missions, then this might free up other forces for other missions.

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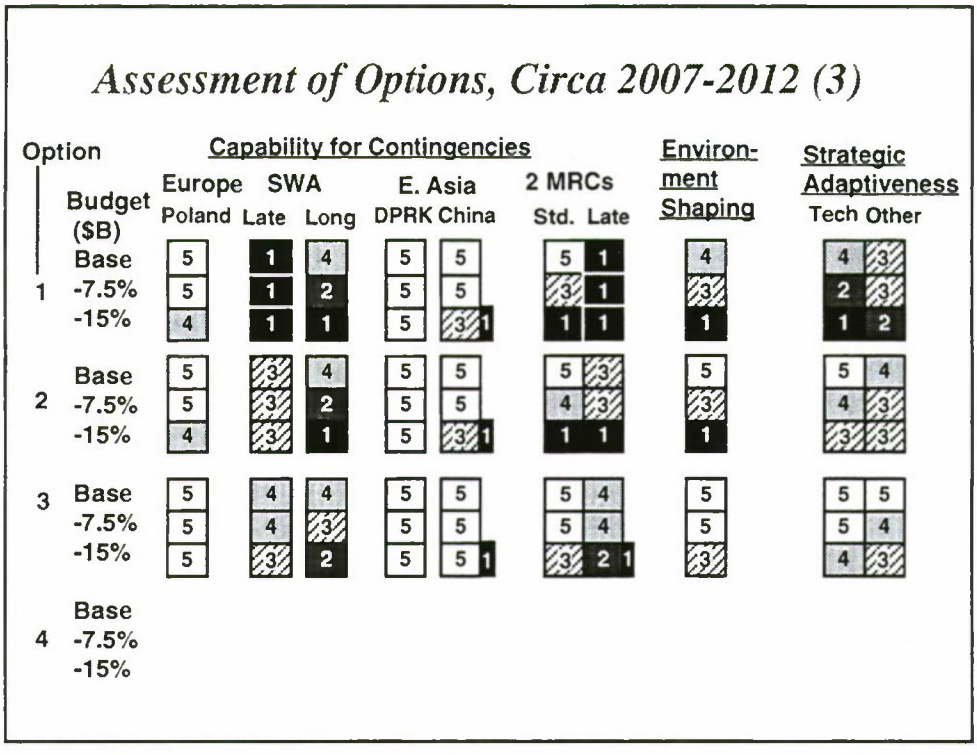
*See forthcoming work by Davis et al. on access constraints and Persian Gulf contingencies for more discussion of both technology's potential in this contingency and concerns about how things could go wrong (Appendix D).



Option 3 "should" score well, because it has been designed with the new evaluation framework in mind. Further, it *postulates* that smaller major units can have capabilities traditionally associated with larger ones as the result of greater mobility, lethality, range, and information dominance. This is arguable, but is consistent with other experience in the information age and with rather extensive analysis.*

Option 3 fares relatively well across the board, except in the two-MRC case for low budget levels where counteroffensive capabilities would be doubtful and there would be little slack. Although naval presence (with substitutes in some cases for carriers) and even small ground-force and air-force forward presence would be maintained, the option would be only marginally effective for environment-shaping in the low-budget case because force structure would have been slashed so much. The United States could probably claim high capabilities for the residual force, but there would be considerable skepticism, especially because the Army would be small and U.S. capability to deal with low-tech wars marginal at best. Some believe that the option would be less effective generally for environment-shaping because other countries might continue to focus on personnel numbers and see disengagement when none was intended. The United States "should" be able to educate observers to appreciate the capabilities of the smaller force, but only with effort.

Option 3 should be excellent for "technology intensive" strategic adaptiveness, even at low budget levels, because it would protect the technological advances and doctrinal changes, thereby permitting a rapid scale-up if necessary. It would be less adaptive for low-tech adaptiveness because at the low budget levels Army structure, even high-readiness reserves, would probably have been slashed. Rebuilding large ground forces would not be easy (but it would be easier than if the residual ground forces and their support structure looked like those of the Cold War).

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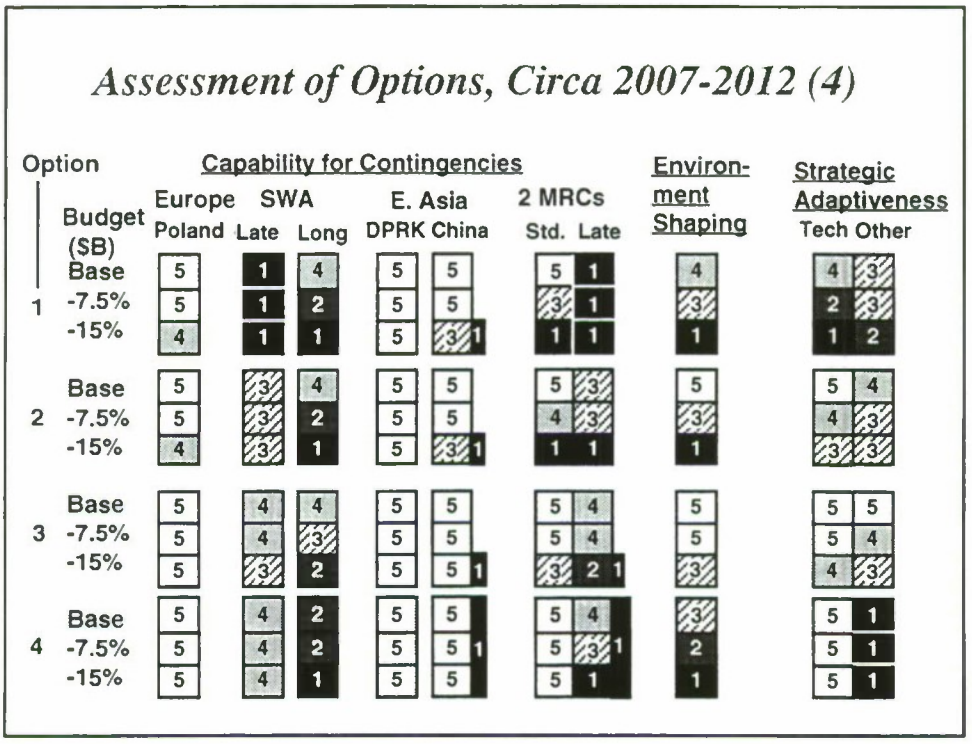
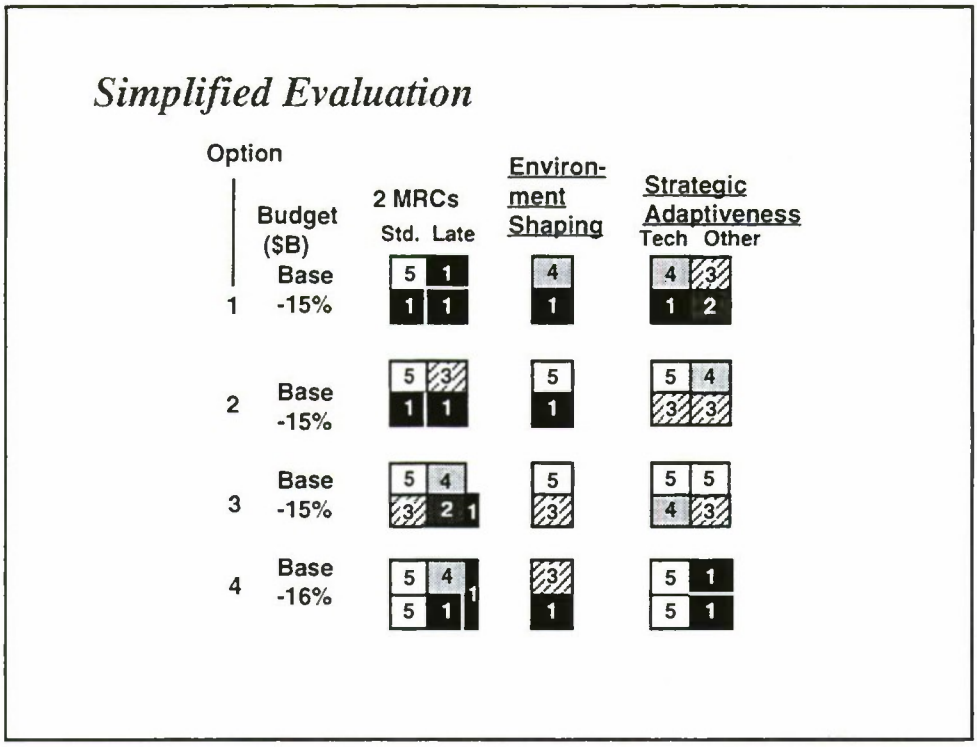
*To review, Option 3's contingency capabilities depend significantly on information dominance and precision fires. If those prove out, then maintaining two-MRC capability with lower end strength should be possible. Another factor here is that information-age organizations typically find it possible to operate more efficiently with smaller building blocks, a task-force approach, and fewer layers of management. This option postulates—reasonably in our view—that such efficiencies can be obtained in U.S. combat forces.



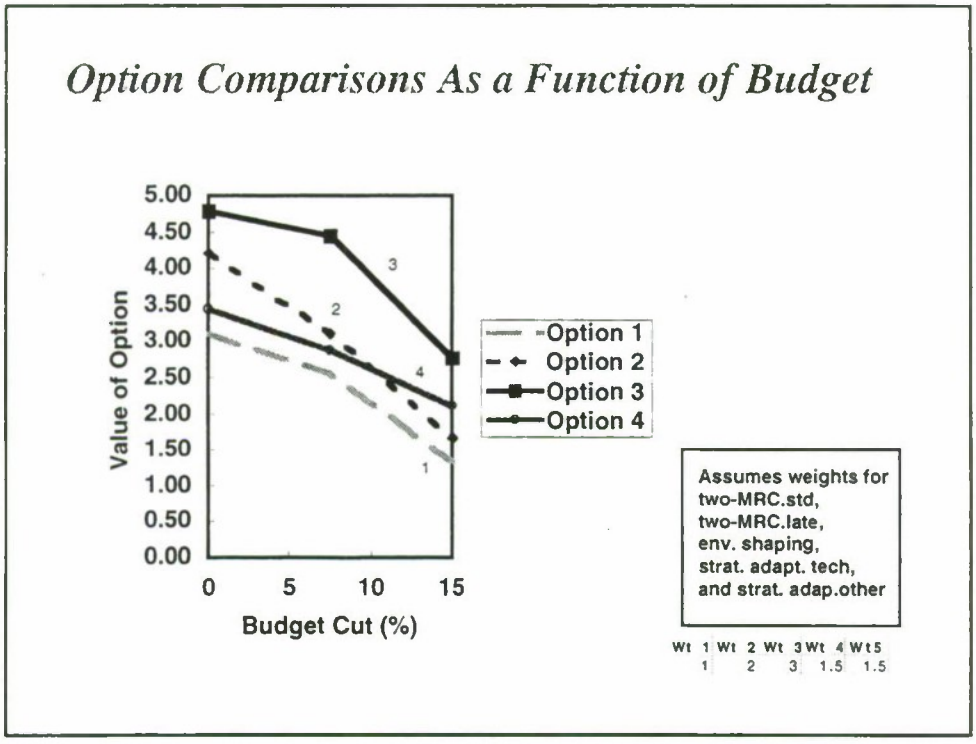
Option 4 looks in many respects like Option 3, but tilts toward smaller forces reliant on high technology that cannot be relied upon for difficult wars involving rough terrain, infantry-intensive tactics, and so on (although improvements in this regard may come along in time). Thus, we show red "slivers" in the China vs. Korea case and the two-MRC case.

Most important, we evaluate Option 4 as rather poor for environment-shaping—even at baseline levels—because it focuses on long range, standoff, clean hands, and casualty avoidance rather than intimate partnership and engagement with regional allies. We suspect that Option 4 would encourage other states to go their own way in developing ballistic missile defenses and even nuclear weapons.

Option 4 should be optimal for technology-intensive strategic adaptiveness. On the other hand, it would clearly have problems if the adaptiveness required involved forward presence, larger armies for infantry-intensive operations, or other relatively low-tech actions.



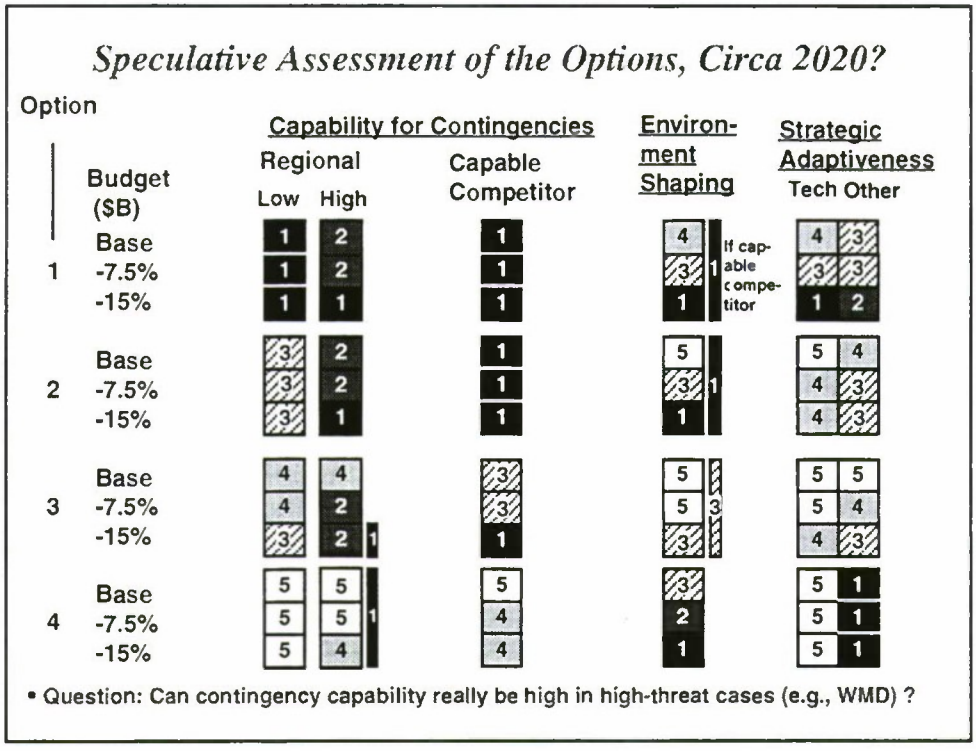
This slide shows a condensed representation that characterizes contingency capability in terms of two-MRC capability, and that considers only the extremes of the budget cases. We use this in what follows.



Stoplight charts can be difficult to fathom when looking for trends. This chart "adds up the colors." We assign 5 to dark green,...., and 1 to red. In this particular illustration, the net assessment assigns equal weight to contingency capability, environment-shaping, and strategic adaptiveness. We represented contingency capability by weighting the two columns of two-MRC capability equally, and strategic adaptiveness by weighting its two columns equally. The result, then, is this chart. Option 3 dominates at all budget levels. Option 4, as expected, looks relatively better at low budget levels because it sacrifices so much force structure for high lethality technology, which should be less expensive—at least through 2010.

Obviously, the curves change if one weights the components of the strategic portfolio differently. That can be done trivially and interactively using spreadsheets. Considering changes of assumption and weight is a key element of our recommended approach. The conclusion that Option 3 is the strongest, however, seems fairly robust. Some of this is definitional, but some is not. Readers doubting the conclusion have a heavy burden, because with all the breakthroughs of modern military technology it is difficult to imagine that a force with fewer people but reengineered formations exploiting information systems and precision strike should not be as or more capable at equal costs. **This said, we are troubled by the lack of an empirical basis for judgments about precision-strike effectiveness against reactive tactics. Stressful and competitive field tests are badly needed, tests that would allow ground commanders to test innovative tactics against air forces and missile forces.**

Option 2, clearly, is an intermediate. That is not accidental. Option 2 may be regarded as a well-hedged start down the path of Options 3 and 4, one that would allow a deliberate pace with iterations before committing to particular configurations and doctrines. If current budget levels can be maintained, and if infrastructure savings can pay for projected procurements, then Option 2 is clearly competitive with Option 3. One might ask, however, why the DoD should not pursue Option 3 anyway, and return some money to the treasury. Is the risk associated with Option 3 strong enough to justify the difference in price for equal capability? In-depth analysis is needed for options of the sort Option 3 postulates.

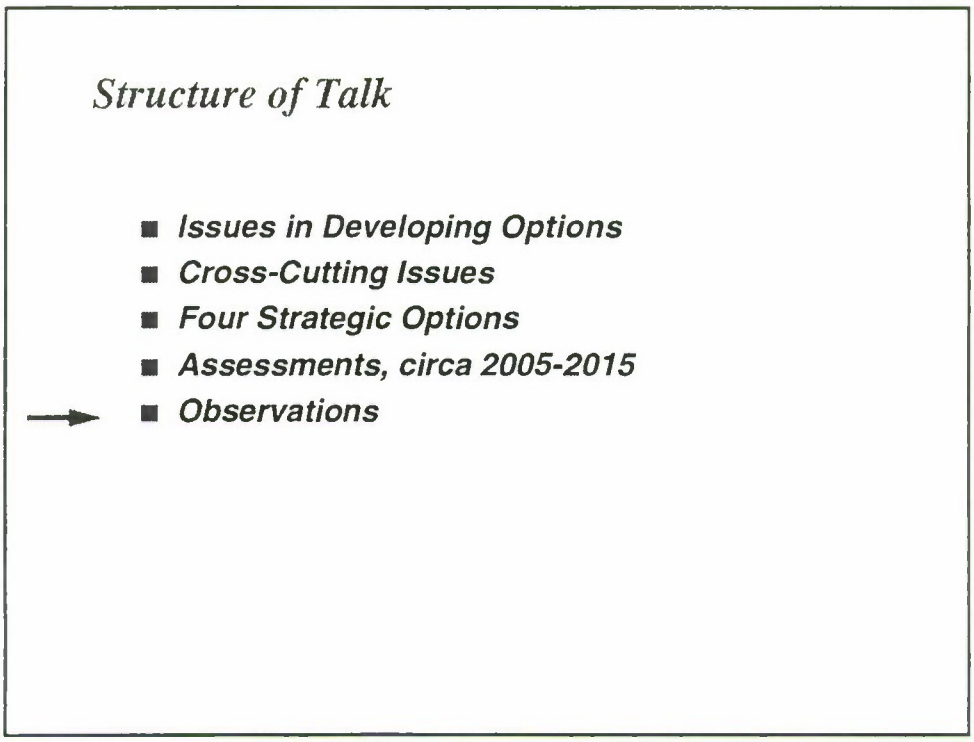


So far, the assessments have almost necessarily been unfavorable to Option 4. After all, Option 4 could not come into its own until late in the second decade of the next century. Furthermore, in evaluating the options in 2010 we have discounted the plausibility of a highly capable competitor (a "near peer"), or even a high-end regional threat. That is consistent with our understanding of international politics and economics. However, beyond 2010—e.g., to 2015 or 2025, those threats cannot be discounted. And, if they materialize, a course of action undertaken with Option 4 in mind might prove to have been wise. This slide tries to describe this situation. Option 4 still looks bad for the low-tech strategic adaptiveness, and it still looks poor for environment-shaping, but in other respects it looks good. Suppose, for example, that the relevant contingencies of 2020 involved WMD and adversaries with relatively sophisticated air defenses, advanced (but inexpensive) minelaying, diesel submarines, UAVs, and missiles with relatively long range.

If the assumptions motivating the Option 4 perspective prove out, then we should expect Option 4 to look superior. Even the environment-shaping issue will be complex, because in the presence of a severe enough capable competitor, the United States might not be able to maintain forward presence and engagement in the way envisioned under Option 3.

As noted at the bottom of the slide, there is a nagging worry here. Does it make sense to contemplate traditional planning for a world quite this dangerous? It may be that "contingency capability" would have a different meaning in such a world, and that U.S. intervention could be only in MOOTW, certain LRCs, and a very special set of other cases. If so, then, many of the fundamental assumptions would need to be revisited.

Finally, we observe that Option 3 can be seen as a stepping-stone toward Option 4 unless one believes so strongly in Option 4's darker vision of the future as to skip another generation of modernization until, e.g., armed UAVs and a stealthy Navy is feasible. Our own view is that the darker vision will likely apply only to some regions and circumstances, and that the forces envisioned under Option 3 would prove valuable for decades. Further, most of the doctrinal changes involved in Option 3 (and experimented with under Option 2) would be appropriate as a stepping-stone in any case.



Finally, some observations.

Summary Observations

- ***"Muddling along," often optimal, could be disastrous if infrastructure cuts aren't adequate or budget is cut***
- ***QDR should change tokens of discussion to lay ground for reengineering:***
  - ***"Two-MRC criterion"-----> Three-criteria standard (environment-shaping, one MRC, two MRCs)***
  - ***Divisions, wings, CVBGs, MEFs---->brigades, squadrons, CCBGs, Marine Expeditionary Brigades (MEBs)***
- ***Need top-down guidance on vision and priorities***
  - ***Modernization/recapitalization/reengineering for next era more important than end strength on margin***

Our first observation is that we take seriously the sensitivity to budget cuts or, equivalently, to failure in the attempt to free up sufficient procurement funding by reengineering infrastructure. Planning should be less rosily optimistic than it has been in budget terms. This suggests a more aggressive approach to reengineering the forces, not deferring decisions and "muddling along."

Our second observation is that the familiar tokens of strategy and force structure should be banished. The DoD should adopt something broader than the two-MRC criterion for force sizing, preferably a three-criteria standard that would elevate environment-shaping and be explicit about the implications of a responsible one-MRC criterion. On the force-structure side we suggest that the DoD immediately begin characterizing forces in terms of smaller building-block unit equivalents such as brigades, squadrons, "contingency capable battle groups," and MEBs. The principles here include exploiting information-age capabilities to reduce the number of hierarchical levels and emphasize task-force methods rather than relying on large and rigid organizations. Our belief is that—by analogy to the civilian world—the military will find it possible to dispense with some levels (e.g., division and wing levels in warfighting), except in particular circumstances that warrant them. Further, smaller units should be able to do more than in earlier days (e.g., protect more frontage or territory, defeat larger enemy units, or destroy more targets). And, as noted repeatedly, concerns about vulnerability and logistics are powerful additional motivations for smaller and more dispersed formations.*

Priority, it seems to us, should be on modernization rather than marginal end strength. Moreover, the modernization should include true reengineering, not just trimming and adjusting.

A key issue is phasing. How quickly should new units and doctrine be introduced? Even if one is enthusiastic about Option 3's reengineering, how does one hedge against error, or against the effects on readiness of the military having to carry forces with a mix of old and new doctrine? These are deep issues that should be the subject of future work.

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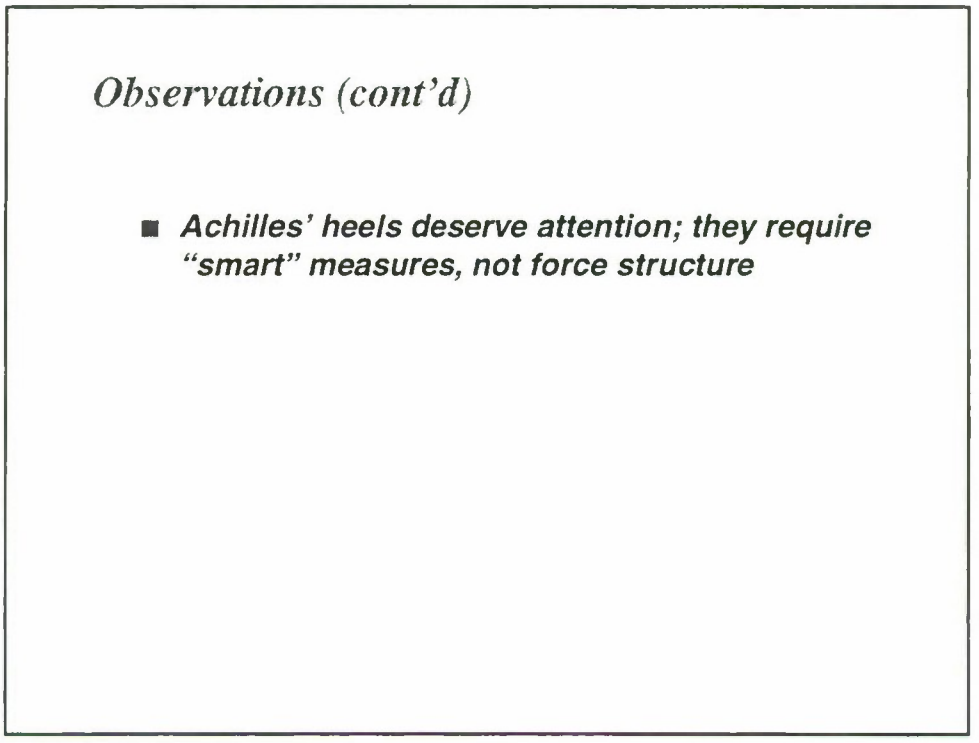
*It is too early to know where the optimum lies. Going to smaller building-block units may sacrifice some economies of scale. It is also possible that increasing span of control will prove more troublesome than imagined. And, finally, recreating large formations would be necessary if certain types of threat arose.



And, finally, let us not forget that the core mission of the DoD is to be prepared to fight and win America's wars. There exist some Achilles' heels, which can be addressed despite budget pressures. The solutions lie in focused application of technology and innovative new units and doctrine, not in preserving end strength on the margin.

Backup Examples: What Do DoD Choices Affect?

Item	Mid-Term Contingency Capability	Environ-ment Shaping	Strategic Adaptive-ness	Comment
Large force structure	****	****	*	2-MRC capability, no vacuums
Hi-tech experiments		**	****	Groundwork for future
A few hi-tech units	****	**	****	Problem solving and experience
More hi-tech units	***	*	*	Cost savings
"Extra" foreign bases	*	**	****	Strategic and operational hedge
NATO enlargement		****	**	Fills strategic vacuum
NATO out-of-area	*	***	**	Deterrence value of cohesion
Small F-22 buy	**	**	****	Important hedge
Full F-22 buy	***	*	*	Needed in long run
Comanche	***	*	*	Operational adaptiveness
V-22	***	*	***	Operational adaptiveness
Arsenal ship	****	***	**	Problem solving; presence; cost savings

This backup slide illustrates how some of DoD's familiar issues can be related to the three components of the portfolio-management approach. It shows subjectively how strongly each of the items or issues contributes positively to each of the components. Contributions to contingency capability are measured for the "mid term," here conceived as out to 2005-2010.

Some of the highlights are as follows: (1) A large total-force structure is at least as important for environment-shaping as for the controversial two-MRC criterion; (2) hi-tech *experiments* are creating the options we will need in the future; (3) actually fielding some hi-tech units of the sort described in Options 2-4 can solve important Achilles' heels problems while also enhancing strategic adaptiveness by turning R&D concepts and demonstrations into "real" operational capabilities that can be refined, perfected, and—if appropriate—scaled up quickly; (3) going further to reengineer the entire force with hi-tech units might save a good deal of money by reducing end strength, but is probably not necessary in the mid term for warfighting; (4) many important policy issues (NATO enlargement, major-ally commitment, and possible "extra" bases) are not needed for near- or mid-term warfighting as now envisioned, but could be quite valuable for both shaping and strategic adaptiveness; (5) some advanced procurement, such as a small buy of the F-22 in a stretch program would solve some military problems and lay the basis for scale-up later; (6) full procurement should be seen as normal replacement of capability and will be appropriate if cost effective, probably replacing on a much less than 1-for-1 basis; (7) the V-22 and Comanche programs, already stretched, will provide important operational adaptiveness as well as replenishment; and (8) the Arsenal ship will address some Achilles' heels problems (the need for short-warning strike power) and enhance the ability to maintain presence.

Our point with this list is not to express definitive degrees of enthusiasm for particular programs, much less to do so in a single slide, but rather to illustrate that having the three-component framework is useful in discussing the programs. Pros and cons exist for each and every judgment, all of which are ultimately complex. Merely as one example, NATO expansion could conceivably prove to be *negative* environment-shaping if it helps radical conservatives rise to power in Russia (unlikely in our view).

To complete our list of examples, let us consider procurement issues briefly. The cost-effectiveness analyst focused on near- and mid-term contingencies may see no threat sufficient to justify the F-22, but the program and a stretch program might have large benefits for strategic adaptiveness relative to cancellation. In the long run, however, the program would amount to straightforward modernization and would be justified by contingency capability. The V-22, by contrast, may be central to the Marines' doctrine of the future, and may provide a great deal of operational adaptiveness that is not valued in work looking solely at "standard" scenarios.

The Arsenal ship could help address serious contingency-related problems, but would also allow U.S. presence to be expanded at any given budget level. It would provide additional ways for the Navy to evolve in the long run.

All of these assessments are illustrative and subjective, but they serve, we hope, to illustrate the point that having the portfolio framework can affect the way one looks at the practical issues facing the DoD.