

**REPORT
ON THE
BOTTOM-UP
REVIEW**



Les Aspin
Secretary of Defense

October 1993

#515

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on the
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MESSAGE FROM THE SECRETARY OF DEFENSE

In March 1993, I initiated a comprehensive review of the nation's defense strategy, force structure, modernization, infrastructure, and foundations. I felt that a department-wide review needed to be conducted "from the bottom up" because of the dramatic changes that have occurred in the world as a result of the end of the Cold War and the dissolution of the Soviet Union. These changes in the international security environment have fundamentally altered America's security needs. Thus, the underlying premise of the Bottom-Up Review was that we needed to reassess all of our defense concepts, plans, and programs from the ground up.

This final report on the Bottom-Up Review provides the results of that unprecedented and collaborative effort. It represents the product of hundreds of individuals' labor and dedication. It describes the extensive analysis that went into the review and the recommendations and decisions that emerged.

First and foremost, the Bottom-Up Review provides the direction for shifting America's focus away from a strategy designed to meet a global Soviet threat to one oriented toward the new dangers of the post-Cold War era. Chief among the new dangers is that of aggression by regional powers.

One of the central factors in our analysis was the judgment that the United States must field forces capable, in concert with its allies, of fighting and winning two major regional conflicts that occur nearly simultaneously. This capability is important in part because we do not want a potential aggressor in one region to be tempted to take advantage if we are already engaged in halting aggression in another. Further, sizing U.S. forces to fight and win two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat.

Our analysis showed that we can maintain a capability to fight and win two major regional conflicts and still make prudent reductions in our overall force structure — so long as we implement a series of critical force enhancements to improve our strategic mobility and strengthen our early-arriving antiarmor capability, and take other steps to ensure our ability to halt regional aggression quickly.

Second, the review's results demonstrate to our allies, friends, and potential foes alike that the United States will remain a world power in this new era. We are not going to withdraw from our involvement around the world. While we no longer need to prepare for global war, the new dangers to our interests are global. Our review spelled out what military forces and capabilities will be needed to meet the new dangers.

Finally, the review lays the foundation for what is needed to fulfill President Clinton's pledge to keep America's military the best-trained, best-equipped, best-prepared fighting force in the world.

Providing that foundation means making readiness our number one defense priority. I have directed that this emphasis on readiness be integrated into the entire defense planning, programming, and budgeting process. We will develop new measures and standards of readiness that fit the new and less predictable requirements of the post-Cold War era.

Fulfilling the President's pledge also means proceeding with a prudent program of selectively modernizing key weapon systems. To keep our technological superiority in a period of constrained resources, we must simplify and improve the acquisition process as we simultaneously exploit the tremendous advances occurring in American industry to maintain the quality and effectiveness of our military systems.

One way we will take advantage of technological advances while reducing research, development, and procurement costs is by launching a Joint Advanced Strike Technology (JAST) program. The JAST program will focus on developing common components — such as engines, avionics, materials, and munitions — that could be used with any future combat aircraft the nation decides to build. Faster incorporation of technological advances into weapons can provide significant advantages for U.S. forces against potential adversaries.

And we must keep faith with the men and women in America's armed forces who have made service to their country their life's work. People are at the heart of our armed forces, and we must not break our bond with them. We must continue to provide the full range and quality of support, training, and education that have made ours the most highly professional, trained, and motivated force in the world. We must also treat fairly those who are leaving the military, as well as the people and communities who have long supported our armed forces.

I am very proud of the work done by the men and women in the Department of Defense, both military and civilian, during the Bottom-Up Review. We all realize that there is still much more to be done. As you read this report, that effort has already begun.

A handwritten signature in black ink, appearing to read "J. R. Aspin". The signature is written in a cursive, flowing style with a large initial "J" and "R".

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SECTION I

NATIONAL SECURITY IN THE POST-COLD WAR ERA

Introduction

The Cold War is behind us. The Soviet Union is no longer. The threat that drove our defense decision-making for four and a half decades — that determined our strategy and tactics, our doctrine, the size and shape of our forces, the design of our weapons, and the size of our defense budgets — is gone.

Now that the Cold War is over, the questions we face in the Department of Defense are: How do we structure the armed forces of the United States for the future? How much defense is enough in the post-Cold War era?

Several important events over the past four years underscore the revolutionary nature of recent changes in the international security environment and shed light on this new era and on America's future defense and security requirements:

- In 1989, the fall of the Berlin Wall and the collapse of communism throughout Eastern Europe precipitated a strategic shift away from containment of the Soviet empire.
- In 1990, Iraq's brutal invasion of Kuwait signaled a new class of regional dangers facing America — dangers spurred not by a global, empire-building ideological power, but by rogue leaders set on regional domination through military aggression while simultaneously pursuing nuclear, biological, and chemical weapons capabilities. The world's response to Saddam's invasion also demonstrated the potential in this new era for broad-based, collective military action to thwart such tyrants.
- In 1991, the failed Soviet coup demonstrated the Russian people's desire for democratic change and hastened the collapse of the Soviet Union as a national entity and military foe.

In the aftermath of such epochal events, it has become clear that the framework that guided our security policy during the Cold War is inadequate for the future. We must determine the characteristics of this new era, develop a new strategy, and restructure our armed forces and defense programs accordingly. We cannot, as we did for the past several decades, premise this year's forces, programs, and budgets on incremental shifts from last year's efforts. We must rebuild our defense strategy, forces, and defense programs and budgets from the bottom up.

The purpose of the Bottom-Up Review was to define the strategy, force structure, modernization programs, industrial base, and infrastructure needed to meet new dangers and seize new opportunities.

An Era of New Dangers

Most striking in the transition from the Cold War is the shift in the nature of the dangers to our interests, as illustrated in Figure 1.

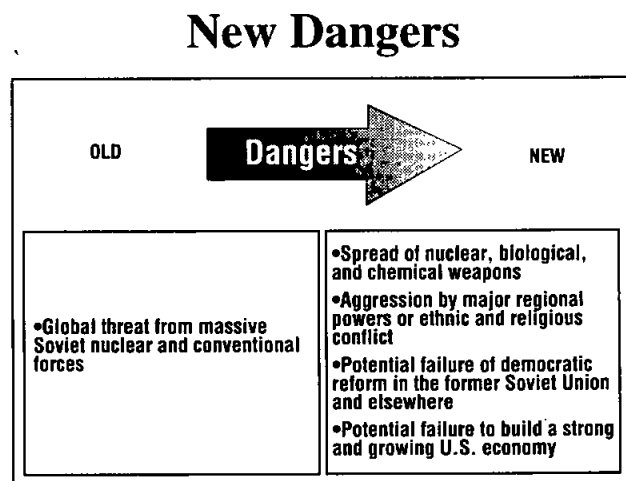


Figure 1

The new dangers fall into four broad categories:

- **Dangers posed by nuclear weapons and other weapons of mass destruction**, including dangers associated with the proliferation of nuclear, biological, and chemical weapons as well as those associated with the large stocks of these weapons that remain in the former Soviet Union.
- **Regional dangers**, posed primarily by the threat of large-scale aggression by major regional powers with interests antithetical to our own, but also by the potential for smaller, often internal, conflicts based on ethnic or religious animosities, state-sponsored terrorism, or subversion of friendly governments.
- **Dangers to democracy and reform**, in the former Soviet Union, Eastern Europe, and elsewhere.
- **Economic dangers** to our national security, which could result if we fail to build a strong, competitive and growing economy.

Our armed forces are central to combating the first two dangers and can play a significant role in meeting the second two. Our predictions and conclusions about the nature and characteristics of these dangers will help mold our strategy and size and shape our future military forces.

An Era of New Opportunities

Today, there is promise that we can replace the East-West confrontation of the Cold War with an era in which the community of nations, guided by a common commitment to democratic principles, free-market economics, and the rule of law, can be significantly enlarged.

As Figure 2 shows, beyond new dangers there are new opportunities: realistic aspirations that, if we dedicate ourselves to pursue worthy goals, we can reach a world of greater safety, freedom, and prosperity. Our armed forces can contribute to this objective. In brief, we see new opportunities to:

- Expand and adapt our existing security partnerships and alliances and build a larger community of democratic nations.
- Promote new regional security arrangements and alliances to improve deterrence and reduce the potential for aggression by hostile regional powers.
- Implement the dramatic reductions in the strategic nuclear arsenals of the United States and the former Soviet Union achieved in the Strategic Arms Reduction Talks (START) I and II treaties.
- Protect and advance our security with fewer resources, freeing excess resources to be invested in other areas vital to our prosperity.

New Opportunities

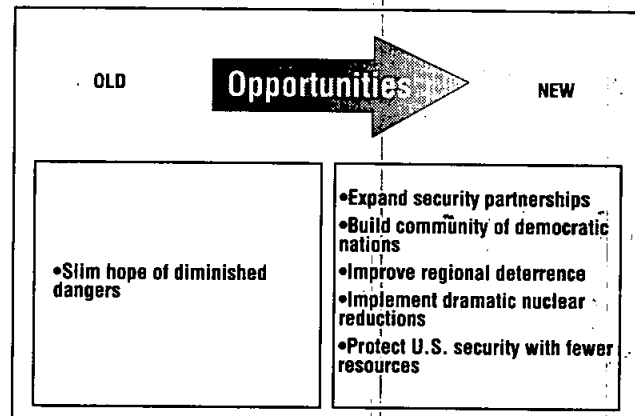


Figure 2

Enduring U.S. Goals

Despite these revolutionary changes in our security environment, the most basic goals of the United States have not changed. They are to:

- Protect the lives and personal safety of Americans, both at home and abroad.
- Maintain the political freedom and independence of the United States with its values, institutions, and territory intact.

- Provide for the well-being and prosperity of the nation and its people.

In addition to these fundamental goals, we have core values that we have an interest in promoting. These include democracy and human rights, the peaceful resolution of conflict, and the maintenance of open markets in the international economic system. The advancement of these core values contributes significantly to the achievement of our fundamental national goals: our nation will be more secure in a world of democratic and pluralistic institutions, and our economic well-being will be enhanced by the maintenance of an open international economic system.

A Strategy of Engagement, Prevention, and Partnership

To protect and advance these enduring goals in this new era, the United States must pursue a strategy characterized by continued political, economic, and military engagement internationally. Such an approach helps to avoid the risks of global instability and imbalance that could accompany a precipitous U.S. withdrawal from security commitments. It also helps shape the international environment in ways needed to protect and advance U.S. objectives over the longer term, and to prevent threats to our interests from arising.

Moreover, we must adapt our defense policies and alliances to meet fast-moving changes both at home and abroad. We and our allies need to modify and build upon the basic bargains upon which our security relationships are based, and begin now to define and create new mutual expectations, arrangements, and institutions to help manage our affairs in the coming decades.

This strategy of engagement will be defined by two characteristics: prevention and partnership. It advocates preventing threats to our interests by promoting democracy, economic growth and free markets, human dignity, and the peaceful resolution of conflict, giving first priority to regions critical to our interests. Our new strategy will also pursue an international partnership

for freedom, prosperity, and peace. To succeed, this partnership will require the contributions of our allies and will depend on our ability to establish fair and equitable political, economic, and military relationships with them.

Our primary task, then, as a nation is to strengthen our society and economy for the demanding competitive environment of the 21st century, while at the same time avoiding the risks of precipitous reductions in defense capabilities and the overseas commitments they support. Such reductions could defeat attempts to improve both our overall security situation and our prosperity.

Sustaining and Adapting Alliances

Building a coalition of democracies will be central to achieving this overarching objective. The common values and objectives of democratic nations provide a basis for cooperation across a broad spectrum of policy areas, from deterrence and defense against aggression to the promotion of individual and minority rights. We can strive to make the most of this commonality of values and interests by expanding and adapting mechanisms to facilitate policy coordination and cooperation among democracies.

A continued willingness on the part of the United States to act as a security partner and leader will be an important factor in sustaining cooperation in many areas. Our strategy therefore envisions that the United States will remain the leading security partner in Europe, East Asia, the Near East, and Southwest Asia. However, we must find ways to sustain our leadership at lower cost. For their part, our allies must be sensitive to the linkages between a sustained U.S. commitment to their security on the one hand, and their actions in such areas as trade policy, technology transfer, and participation in multinational security operations on the other.

Finally, we must encourage the spread of democratic values and institutions. In this regard, the collapse of the former Soviet empire presents an unparal-

leled opportunity to bring peace and prosperity to millions of people who have expressed a clear desire to join the community of democracies.

Objectives and Methodology of the Bottom-Up Review

We undertook the Bottom-Up Review to select the right strategy, force structure, modernization programs, and supporting industrial base and infrastructure to provide for America's defense in the post-Cold War era

Figure 3 shows the step-by-step process we used to develop key assumptions, broad principles, and general objectives and translate them into a specific plan for our strategy, forces, and defense resources. These steps included:

- Assessing the post-Cold War era, and particularly the new dangers and opportunities it presents.
- Devising a defense strategy to protect and advance our interests in this new period.
- Constructing building blocks of forces to implement the strategy.
- Combining these force building blocks to produce options for our overall force structure.
- Complementing the force structure with weapons acquisition programs to modernize our forces, defense foundations to sustain them, and policy initiatives to address new dangers and take advantage of new opportunities.

With the Bottom-Up Review now complete, we will utilize its results to build a multiyear plan for America's future security, detailing the forces, programs, and defense budgets the United States needs to protect and advance its interests in the post-Cold War era.

Methodology of the Bottom-Up Review

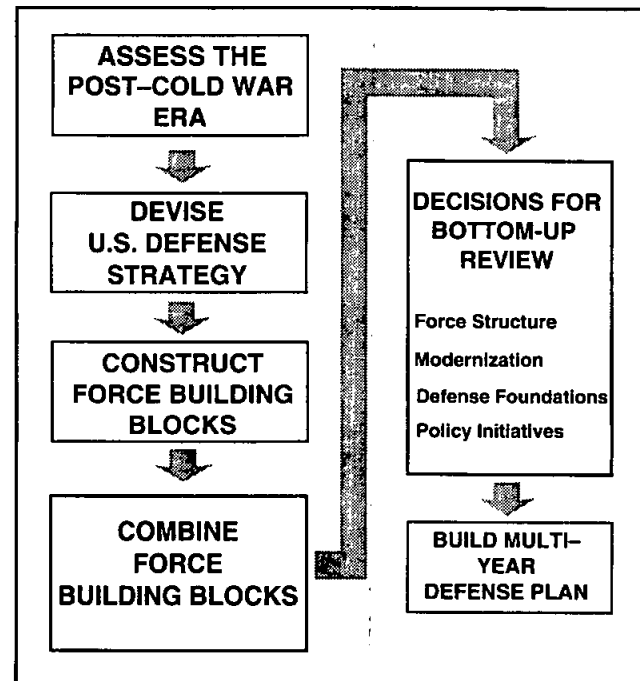


Figure 3

The Bottom-Up Review represented a close collaboration between the civilian and military sectors of the Department of Defense (DoD). Task forces were established — including representatives from the Office of the Secretary of Defense (OSD), the Joint Staff, the unified and specified commands, each of the armed services and, where appropriate, other defense agencies — to review the major issues entailed in planning defense strategy, forces, modernization programs, and other defense foundations. Numerous studies helped to formulate the key issues for decisionmakers and provided the analytical underpinning for the review.

SECTION II

A DEFENSE STRATEGY FOR THE NEW ERA

The requirement to thwart new dangers and seize new opportunities sets the objectives our forces should try to achieve. The discussion below describes in more detail the dangers and opportunities we now foresee and outlines a strategy for dealing with them.

Nuclear Dangers and Opportunities

Dangers posed by nuclear weapons and other weapons of mass destruction (WMD) — that is, biological and chemical weapons — are growing. Beyond the five declared nuclear-weapon states (the United States, Russia, France, Great Britain, and China), at least 20 other nations either have acquired or are attempting to acquire weapons of mass destruction. In most areas where U.S. forces could potentially be engaged on a large scale, such as Korea or the Persian Gulf, our likely adversaries already possess chemical and biological weapons. Moreover, many of these same states (e.g., North Korea, Iraq, and Iran) appear to be embarked upon determined efforts to acquire nuclear weapons.

Weapons of mass destruction in the hands of a hostile power not only threaten U.S. lives but also challenge our ability to use force to protect our interests. The acquisition of nuclear weapons by a regional aggressor would pose very serious challenges. For example, a hostile nuclear-armed state could threaten:

- Its neighbors, perhaps dissuading friendly states from seeking our help to resist aggression.
- Concentrations of U.S. forces deployed in the region.
- Regional airfields and ports critical to U.S. reinforcement operations.
- American cities — either with covertly delivered weapons or, eventually, ballistic or cruise missiles.

We also continue to face nuclear dangers from the former Soviet Union (FSU). Although our relations with Russia are friendly and cooperative, and although the chances of U.S.-Russian military confrontation have declined dramatically and we are cooperating with the Russians to safely reduce their nuclear arsenal, Moscow still controls tens of thousands of nuclear weapons — a factor to be reckoned with should anti-Western elements take control of the Russian government. Even after START II is ratified and implemented, Russia will maintain a formidable nuclear arsenal of 3,000 to 3,500 deliverable weapons.

Moreover, several thousand strategic nuclear weapons from the former Soviet arsenal lie outside Russia. Although the leaders of Ukraine, Kazakhstan, and Belarus have pledged to eliminate the strategic nuclear arsenals on their territories, the disposition of these weapons remains uncertain. While at present we assess that those weapons are secure, increasing political and social disorder in these newly independent states could heighten the risk that nuclear weapons might be used accidentally, in an unauthorized manner, or could fall into the hands of terrorist groups or nations. There is also a danger that the materials, equipment, and know-how needed to make nuclear weapons could leak through porous borders to other nations.

Beyond the promise of continued reductions in the nuclear stockpile of the former Soviet Union, as well as in our own, there are other opportunities for the international community to reduce the danger of nuclear weapons and other weapons of mass destruction. With international cooperation to strengthen and expand existing agreements, it should be possible to slow, if not halt, further proliferation; reduce the size and aggregate destructive power of nuclear, chemical, and biological arsenals; and deter or prevent the actual use of these weapons. This will involve diplomatic means such as strengthening the provisions of and widening participation in the Nuclear Nonproliferation Treaty,

implementing the Chemical Weapons Convention and the Missile Technology Control Regime, and negotiating nuclear testing limitations.

However, in addition to cooperative threat reduction and nonproliferation efforts, the United States will need to retain the capacity for nuclear retaliation against those who might contemplate the use of weapons of mass destruction. We must also continue to explore other ways to improve our ability to counter proliferation, such as active and passive defenses against nuclear, biological, and chemical weapons and their delivery systems.

Addressing Nuclear Dangers and Seizing Opportunities

Given this situation, our strategy for addressing the new dangers from nuclear weapons and other weapons of mass destruction and seizing opportunities to prevent their use must involve a multi-pronged approach.

First, it includes *nonproliferation* efforts to prevent the spread of weapons of mass destruction to additional countries through the strengthening of existing controls on the export of WMD technologies and materials and the improvement and expansion of international mechanisms and agreements for limiting and eliminating nuclear, biological, and chemical weapons.

Second, we must pursue *cooperative threat reduction* with the former Soviet Union, aimed at eliminating its stockpiles of nuclear, chemical, and biological weapons and preventing the spread of weapons of mass destruction, their components, and related technology and expertise within and beyond FSU borders.

While these first two efforts involve primarily diplomatic measures, DoD must also focus on *counterproliferation* efforts to deter, prevent, or defend against the use of WMD if our nonproliferation endeavors fail. Specifically, to address the new nuclear dangers, DoD must emphasize:

- Improvements in intelligence — both overall WMD threat assessments and timely intelligence and detection to support battlefield operations and management.
- Improvements in the ability of both our general purpose and special operations forces to seize, disable, or destroy arsenals of nuclear, biological, and chemical weapons and their delivery systems.
- Maintenance of flexible and robust nuclear and conventional forces to deter WMD attacks through the credible threat of devastating retaliation.
- Development of ballistic and cruise missile defenses, focused on the deployment of advanced theater missile defenses to protect forward-deployed U.S. forces and provision of the capability for a limited defense of the United States.
- Improved passive defenses, including better individual protective gear and better antidotes and vaccines for our forces in the event they are exposed to chemical or biological attacks.
- Other improved equipment, capabilities, and tactics to minimize the vulnerability of U.S. forces to WMD attacks.
- Better technologies to detect weapons transported covertly into the United States and elsewhere for terrorist purposes.

Regional Dangers and Opportunities

Regional dangers include a host of threats: large-scale aggression; smaller conflicts; internal strife caused by ethnic, tribal, or religious animosities; state-sponsored terrorism; subversion of friendly governments; insurgencies; and drug trafficking. Each of these dangers jeopardizes, to varying degrees, interests important to the United States.

Specific examples of these new regional dangers include:

- The continuing military preparations underway in North Korea, including the development of nuclear weapons and longer-range missiles — both of which are viewed with alarm by their neighbors and could spur massive rearmament throughout East Asia.
- The ambitions of Iraq or Iran to dominate Southwest Asia, which continue to threaten our friends and allies in the Persian Gulf region and could endanger global economic stability through limiting access to oil supplies.
- The continuing civil war in Croatia and Bosnia, with its terrible human suffering and potential spillover into the remainder of the former Yugoslavia and other neighboring states.
- The struggles in central and eastern Europe as many states seek to consolidate democracy and build market economies, which, if this difficult transition fails, could produce internal instability and regional conflict.
- State-sponsored terrorism which increasingly brings its violence within U.S. borders.
- Drug trafficking in Latin America and elsewhere which endangers the lives, health, and livelihoods of Americans.

Beyond these dangers, there are also real opportunities. During the Cold War, repressive regimes that were direct adversaries of the United States dominated vast regions of the globe. Today, the countries that pose direct dangers to us are far fewer, and the countries that may join us in thwarting the remaining regional dangers are far more numerous.

Addressing Regional Dangers and Seizing Opportunities

To address the new regional dangers and seize new opportunities, we have developed a multifaceted strategy based on defeating aggressors in major regional conflicts, maintaining overseas presence to deter conflicts and provide regional stability, and conducting smaller-scale intervention operations, such as peace enforcement, peacekeeping, humanitarian assistance, and disaster relief to further U.S. interests and objectives.

Major Regional Conflicts. The United States will continue to have important interests and allies in many regions of the world, from Europe through Southwest Asia, into East Asia, and elsewhere. Regional aggressors represent a danger that must be deterred and, if necessary, defeated by the military capability of the United States and its allies. Moreover, if we were to be drawn into a war in response to the armed aggression of one hostile nation, another could well be tempted to attack its neighbors — especially if it were convinced the United States and its allies did not possess the requisite military capability or will to oppose it.

Therefore, it is prudent for the United States to maintain sufficient military power to be able to win two major regional conflicts that occur nearly simultaneously. With this capability, we will be confident, and our allies as well as potential enemies will know, that a single regional conflict will not leave our interests and allies in other regions at risk.

Further, sizing our forces for two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat, and then turn out, through doctrinal or technological innovation, to be more capable than we expect, or enlist the assistance of other

nations to form a coalition against our interests. The dynamic and unpredictable post-Cold War environment demands that we maintain military capabilities flexible and responsive enough to cope with unforeseen dangers. Thus, U.S. forces will be structured to achieve decisive victory in two nearly simultaneous major regional conflicts and to conduct combat operations characterized by rapid response and a high probability of success, while minimizing the risk of significant American casualties.

Overseas Presence. Stationing and deploying U.S. military forces overseas in peacetime is an essential element in dealing with new regional dangers and pursuing new opportunities.

The peacetime overseas presence of our forces is the single most visible demonstration of our commitment to defend U.S. and allied interests in Europe, Asia, and elsewhere around the world. The presence of U.S. forces deters adventurism and coercion by potentially hostile states, reassures friends, enhances regional stability, and underwrites our larger strategy of international engagement, prevention, and partnership. It also gives us a stronger influence, both political and economic as well as military, in the affairs of key regions.

By stationing forces abroad we also improve our ability to respond effectively to crises or aggression when they occur. Our overseas presence provides the leading edge of the rapid response capability that we would need in a crisis. Moreover, our day-to-day operations with allies improve the ability of U.S. and allied forces to operate effectively together.

Finally, our routine presence helps to ensure our access to the facilities and bases we would need during a conflict or contingency, both to operate in a given region and to deploy forces from the United States to distant regions.

Our overseas presence forces take several forms:

- Permanent or long-term overseas stationing of U.S. ground, air, and maritime forces.

- Periodic and temporary deployments of forces in response to crises or to enhance deterrence through joint training with allied and friendly forces.

- Prepositioning of military equipment and supplies to facilitate a rapid American military response should a crisis occur:

Army and Air Force units are permanently stationed in regions where the United States has important and enduring interests and wants to make clear that aggression will be met by a U.S. military response. Because these units are also part of the forces needed to fight and win two major regional conflicts, we must retain a significant presence in key regions. However, with the demise of the global Soviet threat, we can protect our interests and prepare for potential regional conflicts at significantly reduced levels of forward-deployed forces.

Maritime overseas presence forces range widely across the world's oceans, demonstrating to both friends and potential adversaries that the United States has global interests and the ability to bring military power quickly to bear anywhere in the world. In addition, maritime forces have the operational mobility and political flexibility to reposition to potential trouble spots by unilateral U.S. decision — whether to signal America's interest in resolving a crisis, evacuate American citizens from danger, render humanitarian assistance, or conduct strikes against countries supporting terrorism or defying U.N. resolutions.

Peacekeeping, Peace Enforcement, and Other Intervention Operations. While deterring and defeating major regional aggression will be the most demanding requirement of the new defense strategy, our emphasis on engagement, prevention, and partnership means that, in this new era, U.S. military forces are more likely to be involved in operations short of declared or intense warfare. Events of the past few years have already borne this out, as our armed forces have been involved in a wide range of so-called "intervention" operations, from aiding typhoon victims in Bangladesh during Operation Sea Angel, to delivering

humanitarian relief to the former Soviet Union under Operation Provide Hope, to conducting the emergency evacuation of U.S. citizens from Liberia during Operation Sharp Edge, to restoring order and aiding the victims of the civil war in Somalia during Operation Restore Hope.

Through overseas presence and power projection, our armed forces can help deter or contain violence in volatile regions where our interests are threatened. In some circumstances, U.S. forces can serve a peacekeeping role, monitoring and facilitating the implementation of cease-fire and peace agreements with the consent of the belligerent parties as part of a U.N. or other coalition presence. In more hostile situations, the United States might be called upon, along with other nations, to provide forces to compel compliance with international resolutions or to restore order in peace enforcement operations. In some cases, such as Operation Just Cause in Panama, we may intervene unilaterally to protect our interests. Finally, our armed forces will continue to play an important role in the national effort to halt the importation of illegal drugs to the United States.

In the future, there are likely to be many occasions when we are asked to intervene with military force overseas. In deciding where, when, and how our military should be employed for peace enforcement, peacekeeping, humanitarian relief, or similar types of operations, we will need to consider each situation individually and carefully weigh several factors:

- Does participation advance U.S. national interests?
- Are the objectives clear and attainable?
- How will the intervention affect our other defense obligations?
- Can the United States contribute capabilities and assets necessary for the success of the mission?

Because these operations are so diverse, the forces and capabilities needed to conduct them will vary.

Fortunately, the military capabilities needed for these operations are largely those maintained for other purposes — major regional conflicts and overseas presence. Thus, although specialized training and equipment may often be needed, the forces required will, for the most part, be selected elements of those general purpose forces maintained for other, larger military operations. There are some forces and capabilities that are particularly well suited for intervention operations — for example, special operations forces, including psychological operations and civil affairs units.

New Dangers to Democracy and Opportunities for Democratic Reform

The post-Cold War trend toward democracy throughout much of the world is a tremendously favorable one for the security of the United States. Our values are ascendant. Peaceful resolution of disputes is more likely as democracy spreads.

This positive trend, however, is reversible. In most former communist countries, democratic institutions are not yet firmly established, and market reforms have yet to produce tangible improvements in standards of living. The reversal of reforms and the emergence of ultranationalist authoritarianism, particularly in Russia, would substantially alter the security situation for the United States.

Addressing Dangers to Democracy

U.S. strategy will seek to draw democratizing states in central and eastern Europe, Russia, Ukraine, and other former Soviet republics into deeper partnership. We and our allies should:

- Offer carefully targeted economic aid, training assistance, and education and information programs to help underwrite democratization and market reforms.
- Continue and intensify our program of defense-to-defense contacts to foster mutual understanding and help these countries institute democratic, civilian control over the military.

- Provide assistance to secure and reduce the Russian nuclear arsenal and eliminate strategic nuclear armaments in the non-Russian republics.
- Solicit cooperation in regional security initiatives, such as multilateral peacekeeping operations.

Collectively, such measures constitute "defense by other means" against the potential consequences of failure of reform in Russia and elsewhere. We also need to work with the military in other countries to sustain democracy.

As a hedge against possible reversals, we should strengthen our bilateral and multilateral ties in central and eastern Europe. We must also retain the means to rebuild a larger force structure, should one be needed in the future to confront an emergent authoritarian and imperialistic Russia reasserting its full military potential.

New Economic Dangers and Opportunities

The final — and in the post-Cold War period, perhaps most important — set of dangers that U.S. strategy must confront is economic. In recent years, the U.S. economy has been plagued by an enormous and growing federal debt, sluggish growth, inadequate job creation, and a large trade imbalance. Further, our growing dependence on imported petroleum constitutes an economic danger of its own.

The Department of Defense can help address these economic dangers. DoD can help America seize the opportunity presented by the end of the Cold War to enhance its economic security. We must stress the productive reinvestment of defense resources, facilities, and technology into the civilian economy. Placing new emphasis on key technologies — information and manufacturing technologies and advanced materials — will help strengthen both the military and civilian sectors. With careful restructuring of our forces and support infrastructure, we can maintain capabilities

sufficient to meet our present and future security needs while reducing the overall level of resources devoted to defense.

Beyond simply using fewer resources, the Department of Defense will actively assist in the transition of the U.S. economy away from a Cold War footing. Such assistance will come in the form of providing transition assistance to individuals departing the military, facilitating the conversion of defense industries, and encouraging the freer flow of technologies between the civilian and military sectors.

Sustaining a healthy free trade regime and, within that, expanding U.S. exports and reducing trade imbalances will be key to our future economic growth. Addressing these issues productively will hinge on maintaining sound political and economic relationships with our trading partners. Trade relations are intertwined with security relations: In most cases, we enjoy close security relationships with our trading partners. Our bilateral and multilateral security arrangements are tangible evidence of our interest in regions, and they help ensure that the United States will have a "seat at the table" in forums for political and economic decisionmaking.

Military power supports and is supported by political and economic power. Likewise, security relationships support and are supported by trade relationships. We cannot expect to improve our trade relations or our trading position with our allies if we withdraw from our security relationships. At the same time, we must recognize that domestic support for overseas commitments depends in part on the perception of fairness in trade and other matters.

Objectives of Our Armed Forces

Our examination of new dangers and opportunities leads to the following major objectives for our armed forces.

To meet the new *nuclear danger* and seize the opportunities in this area, our objectives are to:

- Deter the use of nuclear, biological, or chemical weapons against the United States, its forces, and its allies.
- Halt or at least slow the proliferation of nuclear, biological, and chemical weapons.
- Develop capabilities to locate and destroy WMD storage, production, and deployment facilities of potential aggressors and defend our forward-deployed forces from such weapons.
- Continue to reduce the nuclear arsenals of the former Soviet Union and the United States and so reduce the threat of nuclear war.
- Minimize the exposure and the vulnerability of U.S. forces to nuclear, biological, or chemical weapons use.

To meet new *regional dangers* and seize the opportunities that exist to reduce these dangers, our objectives are to:

- Deter and, if necessary, defeat major aggression in regions important to the United States.
- Be capable of fighting and winning two major regional conflicts nearly simultaneously.
- Prepare U.S. forces to participate effectively in multilateral peace enforcement and unilateral intervention operations.
- Continue to adapt existing alliances and build new ones to enhance regional and global security.

To meet the *dangers to democratic reform* and seize the opportunity for a further spread of democracy, our objectives are to:

- Use military-to-military contacts to help foster democratic values in other countries.
- Protect fledgling democracies from subversion and external threats.

To meet the *dangers to American economic prosperity* and seize the opportunity to accelerate U.S. economic growth and promote global economic well-being, our objectives are to:

- Redirect resources to investments that improve both our defense posture and our competitive position economically.
- Facilitate reinvestment that allows defense industries to shift to nondefense production.
- Support the development of dual-use technologies and encourage the freer flow of technology between the military and civilian sectors.
- Use our long-standing security relationships with key allies and partners to build a bridge to greater economic cooperation and to sustain and enhance global free trade.
- Actively assist nations in making the transition from controlled to market economies.

Building Future Capabilities: Guiding Principles

While the objectives outlined above provide a framework for determining our force structure and modernization requirements, certain other underlying principles guided our effort during the Bottom-Up Review. In his inaugural address, President Clinton pledged to keep America's military the best-trained, best-equipped, best-prepared fighting force in the world. To fulfill that pledge, we must keep it the focus of our effort throughout the planning, programming, and budgeting process.

First, we must *keep our forces ready to fight*. We have already witnessed the challenges posed by the new dangers in operations like Just Cause (Panama), Desert Storm (Iraq), and Restore Hope (Somalia). Each of these were "come as you are" campaigns with little time to prepare our forces for the challenges they met.

The new dangers thus demand that we keep our forces ready to fight as a top priority in allocating scarce defense resources. We must adequately fund operations and maintenance accounts, maintain sufficient stocks of spare parts, keep our forces well-trained and equipped, and take the other steps essential to preserving readiness.

A key element of maintaining forces ready to fight is to *maintain the quality of our people*, so that they remain the best fighting force in the world. First, this means keeping our personnel highly motivated by treating them fairly and maintaining their quality of life. It also means continuing to recruit talented young

men and women, expanding career opportunities for all service members, and putting in place programs to ease the transition to civilian life for departing military personnel as we bring down the size of our forces.

We must also *maintain the technological superiority* of our weapons and equipment. Operation Desert Storm demonstrated that we produce the best weapons and military equipment in the world. This technological edge helps us to achieve victory more swiftly and with fewer casualties. We must design a balanced modernization program that safeguards this edge and the necessary supporting industrial base without buying more weapons than we need or can afford.

SECTION III

FORCES TO IMPLEMENT THE DEFENSE STRATEGY

We describe the forces and capabilities needed to implement our defense strategy and guide the construction of our overall force structure as "building blocks." Force building blocks are a valuable analytical tool that allow us to see the linkage between certain types and quantities of forces and the tasks they are meant to perform. They also make clearer the price to be paid in making cuts in the military structure: eliminating a force building block can mean eliminating the capability to conduct a particular task.

Four broad classes of potential military operations were used in the Bottom-Up Review to evaluate the adequacy of future force structure alternatives:

- Major regional conflicts (MRCs).
- Smaller-scale conflicts or crises that would require U.S. forces to conduct peace enforcement or intervention operations.
- Overseas presence — the need for U.S. military forces to conduct normal peacetime operations in critical regions.
- Deterrence of attacks with weapons of mass destruction, either against U.S. territory, U.S. forces, or the territory and forces of U.S. allies.

This list is not all-inclusive. We will provide forces and military support for other types of operations, such as peacekeeping, humanitarian assistance, and to counter international drug trafficking. However, while such operations often call for small numbers of specialized forces or assets, they are not likely to be major determinants of general purpose force structure. However, they could require specialized training and equipment.

Our analysis of each of these four types of operations allowed us to construct, for planning purposes, building blocks of the forces required for them. By combining the building blocks and adjusting them to

account for judgments about the need to conduct simultaneous operations, we were able to determine the number and mix of active and reserve forces that we will need to carry out our defense strategy.

Major Regional Conflicts

During the Cold War, U.S. military planning was dominated by the need to confront numerically superior Soviet forces in Europe, the Far East, and Southwest Asia. Now, the focus is on the need to project power into regions important to U.S. interests and to defeat potentially hostile regional powers, such as North Korea or Iraq. Although these nations are unlikely to threaten the United States directly, they and other countries like them have shown that they are willing and able to field forces sufficient to threaten important U.S. interests, friends, and allies. Operation Desert Storm was a powerful demonstration of the need to counter such regional aggression.

Potential regional aggressors are expected to be capable of fielding military forces in the following ranges:

- 400,000 – 750,000 total personnel under arms
- 2,000 – 4,000 tanks
- 3,000 – 5,000 armored fighting vehicles
- 2,000 – 3,000 artillery pieces
- 500 – 1,000 combat aircraft
- 100 – 200 naval vessels, primarily patrol craft armed with surface-to-surface missiles, and up to 50 submarines
- 100 – 1,000 Scud-class ballistic missiles, some possibly with nuclear, chemical, or biological warheads.

Military forces of this size could threaten regions important to the United States if allied or friendly states were unable to match their power. Hence, we must prepare our forces to assist those of friends and allies in deterring, and ultimately defeating, aggression should it occur.

Scenarios as Planning Tools. Every war that the United States has fought has been different from the last, and different from what defense planners had envisioned. For example, the majority of the bases and facilities used by the United States and its coalition partners in Operation Desert Storm were built in the 1980s, when we envisioned a Soviet invasion through Iran to be the principal threat to the Gulf region. In planning forces capable of fighting and winning major regional conflicts, we must avoid preparing for past wars. History suggests that we most often deter the conflicts that we plan for and actually fight the ones we do not anticipate.

For planning and assessment purposes, we have selected two illustrative scenarios that are both plausible and posit demands characteristic of those that could be posed by conflicts with other potential adversaries. Figure 4 displays the scenarios and their relationship to planning for force employment across a range of potential conflicts. While a number of scenarios were examined, the two that we focused on most closely in the Bottom-Up Review envisioned aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea.

Scenarios as Planning Tools

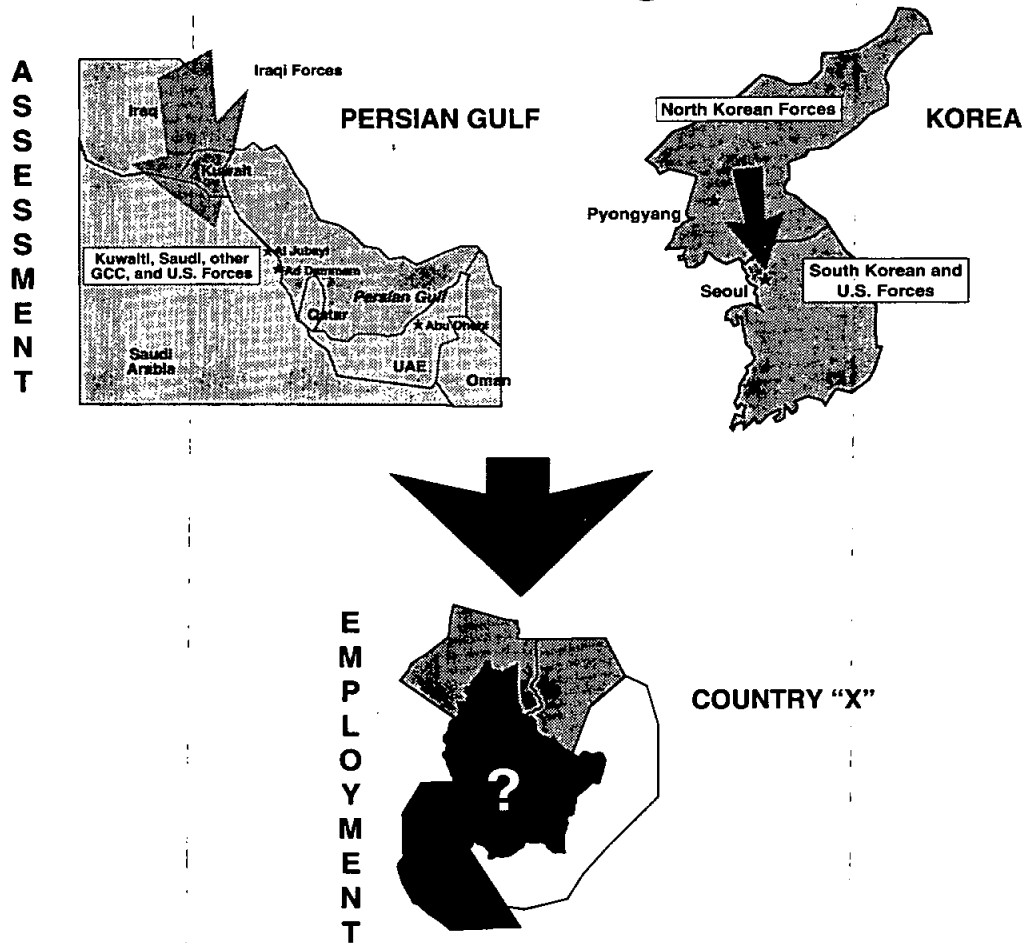


Figure 4

Neither of these scenarios should be regarded as a prediction of future conflicts, but each provides a useful representation of the challenge that could be presented by a well-armed regional power initiating aggression thousands of miles from the United States. As such, the scenarios serve as yardsticks against which to assess, in gross terms, the capabilities of U.S. forces.

In each scenario, we examined the performance of projected U.S. forces in relation to critical parameters, including warning time, the threat, terrain, weather, duration of hostilities, and combat intensity. Overall, these scenarios were representative of likely ranges of these parameters.

Both scenarios were developed for analyses conducted by the Joint Staff. Each assumed a similar enemy operation: an armor-heavy, combined-arms offensive against the outnumbered forces of a neighboring state. U.S. forces, most of which were not presumed to be present in the region when hostilities commenced, had to deploy to the region quickly, supplement indigenous forces, halt the invasion, and defeat the aggressor.

Such a "short notice" scenario, in which only a modest number of U.S. forces are in a region at the outset of hostilities, is both highly stressing and plausible. History shows that we frequently fail to anticipate the location and timing of aggression, even large-scale attacks against our interests. In such cases, it may also not be possible, prior to an attack, to reach a political consensus on the proper U.S. response or to convince our allies to grant U.S. forces access to facilities in their countries.

We also expect that the United States will often be fighting as the leader of a coalition, with allies providing some support and combat forces. As was the case in Desert Storm, the need to defend common interests should prompt our allies in many cases to contribute capable forces to a war effort. However, our forces must be sized and structured to preserve the flexibility and the capability to act unilaterally, should we choose to do so.

The Four Phases of U.S. Combat Operations

Our first priority in preparing for regional conflicts is to prevent them from ever occurring. This is the purpose of our overseas presence forces and operations, joint exercises, and other military capabilities — to deter potential regional aggressors from even contemplating an attack. Should deterrence fail and conflict occur, it is envisioned that combat operations would unfold in four main phases.

Phase 1: Halt the invasion. The highest priority in defending against a large-scale attack will most often be to minimize the territory and critical facilities that an invader can capture. Should important strategic assets fall, the invader might attempt to use them as bargaining chips. In addition, stopping an invasion quickly may be key to ensuring that a threatened ally can continue its crucial role in the collective effort to defeat the aggressor. Further, the more territory the enemy captures, the greater the price to take it back: The number of forces required for a counteroffensive to repel an invasion can increase, with correspondingly greater casualties, depending on the progress the enemy makes. In the event of a short-warning attack, more U.S. forces would need to deploy rapidly to the theater and enter the battle as quickly as possible.

Phase 2: Build up U.S. combat power in the theater while reducing the enemy's. Once an enemy attack had been stopped and the front stabilized, U.S. and allied efforts would focus on continuing to build up combat forces and logistics support in the theater while reducing the enemy's capacity to fight. Land, air, maritime, and special operations forces from the United States and coalition countries would continue to arrive. These forces would seek to ensure that the enemy did not regain the initiative on the ground, and they would mount sustained attacks to reduce the enemy's military capabilities in preparation for a combined-arms counteroffensive.

Phase 3: Decisively defeat the enemy. In the third phase, U.S. and allied forces would seek to mount

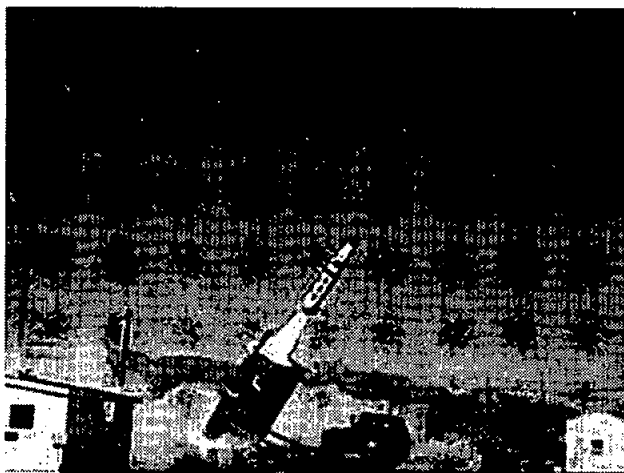
a large-scale, air-land counteroffensive to defeat the enemy decisively by attacking his centers of gravity, retaking territory he had occupied, destroying his war-making capabilities, and successfully achieving other operational or strategic objectives.

Phase 4: Provide for post-war stability. Although a majority of U.S. and coalition forces would begin returning to their home bases, some forces might be called upon to remain in the theater after the enemy had been defeated to ensure that the conditions that resulted in conflict did not recur. These forces could help repatriate prisoners, occupy and administer some or all of the enemy's territory, or ensure compliance with the provisions of war-termination or cease-fire agreements.

Forces for Combat Operations

Described below are the types of forces that are needed to conduct joint combat operations in all four phases of an MRC.

Forces for Phase 1. Primary responsibility for the initial defense of their territory rests, of course, with our allies. As forces of a besieged country move to blunt an attack, U.S. forces already in the theater would move rapidly to provide assistance. However, as already mentioned, we are drawing down our overseas



An ATACMS launch.

presence in response to the end of the Cold War. Thus, the bulk of our forces, even during the early stages of a conflict, would have to come from the United States. This places a premium on rapidly deployable yet highly lethal forces to blunt an attack.

The major tasks to be performed in this phase and beyond are:

- Help allied forces establish a viable defense that halts enemy ground forces before they can achieve critical objectives.
- Delay, disrupt, and destroy enemy ground forces and damage the roads along which they are moving, in order to halt the attack. U.S. attacks would be mounted by a combination of land- and sea-based strike aircraft and heavy bombers using precision-guided munitions; long-range tactical missiles; ground maneuver forces with antiarmor capabilities; and special operations forces.
- Protect friendly forces and rear-area assets from attack by aircraft or cruise and ballistic missiles, using land- and sea-based aircraft, ground- and sea-based surface-to-air missiles, and special operations forces.
- Establish air superiority and suppress enemy air defenses as needed, including those in rear areas and those accompanying invading ground forces, using land- and sea-based strike and jamming aircraft as well as surface-to-surface missiles, such as the Army Tactical Missile System (ATACMS).
- Destroy high-value targets, such as weapons of mass destruction, and degrade the enemy's ability to prosecute military operations through attacks focused on his central command, control, and communications facilities. For such attacks, we would rely heavily on long-range bombers and land- and sea-based strike aircraft using precision-guided munitions, and on cruise missiles. Special operations forces would also play an important role in such attacks.

- Establish maritime superiority, using naval task forces with mine countermeasure ships, in order to ensure access to ports and sea lines of communication, and as a precondition for amphibious assaults.

Forces for Phase 2. Many of the same forces employed in Phase 1 would be used in the second phase to perform similar tasks — grinding down the enemy's military potential while additional U.S. and other coalition combat power was brought into the region. As more land- and sea-based air forces arrived, emphasis would shift from halting the invasion to isolating enemy ground forces and destroying them, destroying enemy air and naval forces, destroying stocks of supplies, and broadening attacks on military-related targets in the enemy's rear area. These attacks could be supplemented with direct and indirect missile and artillery fire from ground, air, and naval forces.

Meanwhile, other U.S. forces, including heavy ground forces, would begin arriving in the theater to help maintain the defensive line established at the end of Phase 1 and to begin preparations for the counteroffensive.

Forces for Phase 3. The centerpiece of Phase 3 would be the U.S. and allied counteroffensive, aimed at engaging, enveloping, and destroying or capturing enemy ground forces occupying friendly territory. Major tasks within the counteroffensive include:

- Breaching tactical and protective minefields.
- Maneuvering to envelop or flank and destroy enemy forces, including armored vehicles in dug-in positions.
- Conducting or threatening an amphibious invasion.
- Applying air power using precision-guided munitions in support of ground forces and for deep interdiction attacks.

- Dislodging and defeating infantry fighting from dug-in positions, and defeating light infantry on urban terrain.

- Destroying enemy artillery.
- Locating and destroying mobile enemy reserves.

Combat power in this phase would include highly mobile armored, mechanized, and air assault forces, supported by the full complement of air power, special operations forces, and land- and sea-based fire support. Amphibious forces would provide additional operational flexibility to the theater commander.

Forces for Phase 4. Finally, a smaller complement of joint forces would remain in the theater once the enemy had been defeated. These forces might include a carrier battle group, one to two wings of fighters, a division or less of ground forces, and special operations units.

Supporting Capabilities

The foregoing list of forces for the various phases of a major regional conflict included only combat force elements. Several types of support capabilities would play essential roles in all phases.



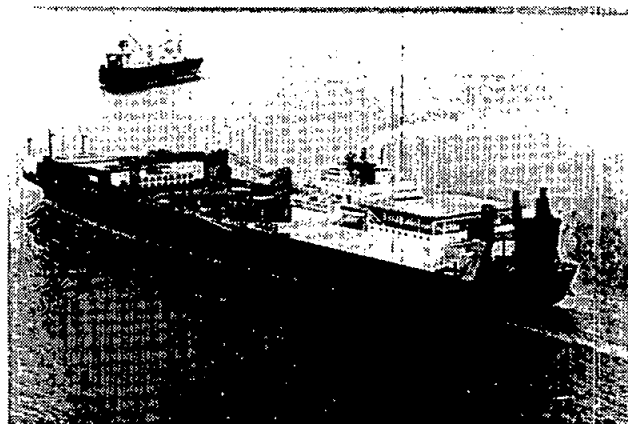
U.S. Marines conducting amphibious assault exercise.

Airlift. Adequate airlift capacity is needed to bring in forces and material required for the first weeks of an operation. In Operations Desert Shield/Desert Storm, the United States airlifted to the Gulf region, on average, more than 2,400 tons of material per day. We anticipate that at least the same level of lift capacity would be needed to support high-intensity military operations in the opening phase of a future MRC and to help sustain operations thereafter.

Prepositioning. Prepositioning heavy combat equipment and supplies, both ashore and afloat, can greatly reduce both the time required to deploy forces to distant regions and the number of airlift sorties devoted to moving such supplies. Initiatives now underway will accelerate the arrival of heavy Army forces overseas in response to crises.

Sealift. In any major regional conflict, most combat equipment and supplies would be transported by sea. While airlift and prepositioning provide the most rapid response for deterrence and initial defense, the deployment of significant heavy ground and air forces, their support equipment, and sustainment must come by sea.

Battlefield Surveillance; Command, Control, and Communications. Accurate information on the location and disposition of enemy forces is a prerequisite for effective military operations. Hence, our planning envisions the early deployment of reconnaissance and command and control aircraft and ground-based assets to enable our forces to see the enemy and to pass information quickly through all echelons of our forces. Total U.S. intelligence and surveillance capability will be less than it was during the Cold War, but it will be better able to provide timely information to battlefield commanders. Advanced systems — such as the Joint Surveillance and Target Attack Radar System (JSTARS), the upgraded Airborne Warning and Control System (AWACS), and the Milstar satellite communications system — will ensure that U.S. forces have a decisive advantage in tactical intelligence and communications.



Maritime prepositioning ships.

Advanced Munitions. As coalition operations in the Gulf War demonstrated, advanced precision-guided munitions can dramatically increase the effectiveness of a fighting force. Precision-guided munitions already in the U.S. inventory (for example, laser-guided bombs) as well as new types of munitions still under development are needed to ensure that U.S. forces can operate successfully in future MRCs and other types of conflicts. New “smart” and “brilliant” munitions under development hold promise of dramatically improving the ability of U.S. air, ground, and maritime forces to destroy enemy armored vehicles and halt invading ground forces, as well as destroy fixed targets at longer ranges, thus reducing exposure to enemy air defenses.

Aerial Refueling. Large numbers of aerial-refueling aircraft would be needed to support many components of a U.S. theater campaign. Fighter aircraft deploying over long distances require in-flight refueling. Airlifters can carry more cargo longer distances if aerial refueling is available en route. Aerial surveillance and control platforms, such as AWACS and JSTARS, also need airborne refueling in order to achieve maximum mission effectiveness.

The MRC Building Block

In planning our future force structure and allocating resources, we established force levels and support objectives that should enable us to win one MRC

across a range of likely conflicts. Our detailed analyses of possible future MRCs, coupled with military judgment as to the outcomes, suggest that the following forces will be adequate to execute the strategy outlined above for a single MRC:

- 4 – 5 Army divisions
- 4 – 5 Marine Expeditionary Brigades
- 10 Air Force fighter wings
- 100 Air Force heavy bombers
- 4 – 5 Navy aircraft carrier battle groups
- Special operations forces

These forces constitute a prudent building block for force planning purposes. In the event of a conflict, our response would depend on the nature and scale of the aggression and on circumstances elsewhere in the world. If the initial defense failed to halt the invasion quickly, or if circumstances in other parts of the world permitted, U.S. decisionmakers might choose to commit more forces than those listed (for example, two additional Army divisions). These added forces would help either to achieve the needed advantage over the enemy, to mount a decisive counteroffensive, or to accomplish more ambitious war objectives, such as the complete destruction of the enemy's war-making potential. But our analysis also led us to the conclusion that enhancements to our military forces, focused on ensuring our ability to conduct a successful initial defense, would both reduce our overall ground force requirements and increase the responsiveness and effectiveness of our power projection forces.

Fighting Two MRCs

In this context, we decided early in the Bottom-Up Review that the United States must field forces sufficient to fight and win two major regional conflicts that occur nearly simultaneously. This is prudent for two reasons.

First, we need to avoid a situation in which the United States in effect makes simultaneous wars more likely by leaving an opening for potential aggressors to attack their neighbors, should our engagement in a war

in one region leave little or no force available to respond effectively to defend our interests in another.

Second, fielding forces sufficient to win two wars nearly simultaneously provides a hedge against the possibility that a future adversary — or coalition of adversaries — might one day confront us with a larger-than-expected threat. In short, it is difficult to predict precisely what threats we will confront ten to twenty years from now. In this dynamic and unpredictable post-Cold War world, we must maintain military capabilities that are flexible and sufficient to cope with unforeseen threats.

For the bulk of our ground, naval, and air forces, fielding forces sufficient to provide this capability involves duplicating the MRC building block described above. However, in planning our overall force structure, we must recognize two other factors. First, we must have sufficient strategic lift to deploy forces when and where they are needed. Second, certain specialized high-leverage units or unique assets might be “dual tasked,” that is, used in both MRCs. For example, certain advanced aircraft — such as B-2s, F-117s, JSTARs, and EF-111s — that we have purchased in limited numbers because of their expense would probably need to shift from the first to second MRC.

Force Enhancements to Support Our Strategy

As previously mentioned, we have already undertaken or are planning a series of enhancements to our forces to improve their capability, flexibility, and lethality. These improvements are geared especially toward buttressing our ability to conduct a successful initial defense in any major regional conflict.

As shown in Figure 5, the enhancements include improving: (1) strategic mobility, through more prepositioning and enhancements to airlift and sealift; (2) the strike capabilities of aircraft carriers; (3) the lethality of Army firepower; and (4) the ability of long-range bombers to deliver conventional smart munitions.

Strategic Mobility. Our plans call for substantial enhancements to our strategic mobility — most of which were first identified in the 1991 Mobility Requirements Study (MRS).

First, we will either continue the program to purchase and deploy the C-17 airlifter or purchase other airlifters to replace our aging C-141 transport aircraft.

Development of the C-17 has been troubled from the start and we will continue to monitor the program's progress closely, but significant, modern, flexible airlift capacity is essential to our defense strategy. A decision on the C-17 will be made after a thorough review by the Defense Acquisition Board is completed in the fall of 1993.

Force Enhancements to Halt a Short-Warning Attack

		Today's Force	Future Force
Persian Gulf Region	Prepo	1 Battalion Training Set 1 Maritime Prepositioning Ship (MPS) Squadron 7 Prepositioning Ships	2 Brigade Sets ashore 1 Brigade Set afloat* 1 MPS Squadron 7 Prepositioning Ships
	Forces	1 Carrier Battle Group (Tether)	1 Carrier Battle Group (Tether)
PHASE I Halt Invasion		FAIR - Lack of heavy forces to help stop invader - Insufficient prepositioning - Limited antiarmor capability - Limited anti-tactical ballistic missile (ATBM) capability	GOOD - 3 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Improved antiarmor precision-guided munitions - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces
KOREA	Prepo	1 Brigade-Sized Marine Expeditionary Force (MEF) 1 MPS Squadron	1 Brigade Set ashore 1 Brigade Set afloat* 2 Brigade-Sized MEFs (2 MPS Squadrons)
	Forces	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF
PHASE I Halt Invasion		GOOD - Substantial in-place forces - Established command, control, communications, and intelligence (C3I) network - Rapid reinforcement from Japan, Okinawa - Limited ATBM capability	GOOD - 2 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Improved antiarmor precision-guided munitions - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces

* Brigade set would be positioned to "swing" to either region.

Figure 5

Second, we plan to store a brigade set of heavy Army equipment afloat; the ships carrying this material would be positioned in areas from which they could be sent on short notice either to the Persian Gulf or to Northeast Asia. Other prepositioning initiatives would accelerate the arrival of heavy Army units in Southwest Asia and Korea.

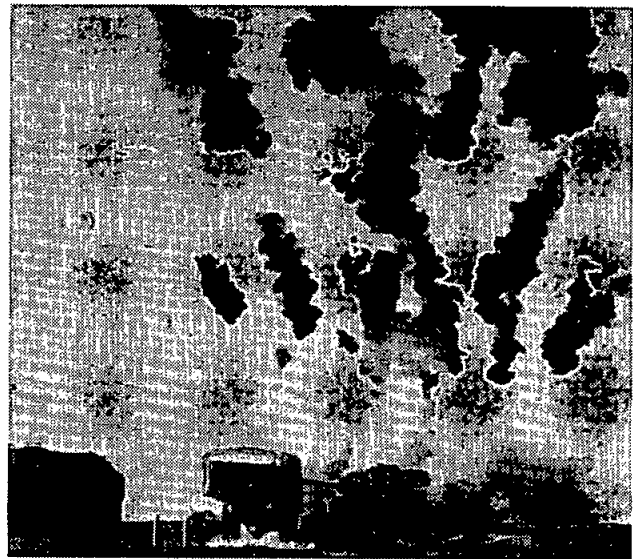
Third, we will increase the capacity of our surge sealift fleet to transport forces and equipment rapidly from the United States to distant regions by purchasing additional roll-on/roll-off ships.

Fourth, we will improve the readiness and responsiveness of the Ready Reserve Force (RRF) through a variety of enhancements. Finally, we will fund various efforts to improve the "fort-to-port" flow of personnel, equipment, and supplies in the United States.

Naval Strike Aircraft. The Navy is examining a number of innovative ways to improve the firepower aboard its aircraft carriers. First, the Navy will improve its strike potential by providing a precision ground-attack capability to many of its F-14 aircraft. It also will acquire stocks of new "brilliant" antiarmor weapons for delivery by attack aircraft. Finally, the Navy plans to develop the capability to fly additional squadrons of F/A-18s to forward-deployed aircraft carriers that would be the first to arrive in response to a regional contingency. These additional aircraft would increase the striking power of the carriers during the critical early stages of a conflict.

Army Firepower. The Army is developing new, smart submunitions that can be delivered by ATACMS, the Multiple-Launch Rocket System (MLRS), the Tri-Service Standoff Attack Missile (TSSAM) now under development, and by standard tube artillery. In addition, the Longbow fire control radar system will increase the effectiveness and survivability of the AH-64 Apache attack helicopter. We also are examining more prepositioning of ATACMS and MLRS and having Apaches self-deploy from their overseas bases so that all would be available in the early stages of a conflict.

Air Force Long-Range Bombers and Munitions. Air Force enhancements will be in two areas — bombers and munitions. First, we plan to modify the Air Force's B-1 and B-2 long-range heavy bombers to improve their ability to deliver "smart" conventional munitions against attacking enemy forces and fixed targets. Second, we will develop all-weather munitions. For example, the Air Force is developing a guidance package for a tactical munitions dispenser filled with antiarmor submunitions that could be used in all types of weather. These programs will dramatically increase our capacity to attack and destroy critical targets in the crucial opening days of a short-warning conflict.



Delivery of "smart" sensor-fused weapons on ground vehicles.

In addition, two other force enhancements are important to improving our ability to respond to the demanding requirement of two nearly simultaneous MRCs: improvements to reserve component forces and allied force capabilities.

Reserve Component Forces. We have undertaken several initiatives to improve the readiness and flexibility of Army National Guard combat units and other reserve component forces in order to make them

more readily available for MRCs and other tasks. For example, one important role for combat elements of the Army National Guard is to provide forces to supplement active divisions, should more ground combat power be needed to deter or fight a second MRC. In the future, Army National Guard combat units will be better trained, more capable, and more ready. If mobilized early during a conflict, brigade-sized units could provide extra security and flexibility if a second conflict arose while the first was still going on. In addition, the Navy plans to increase the capability and effectiveness of its Navy/Marine Corps reserve air wing through the introduction of a reserve/training aircraft carrier.

Allied Military Capabilities. We will continue to help our allies in key regions improve their defense capabilities. For example, we are assisting South Korea in its efforts to modernize its armed forces and take on greater responsibility for its own defense — including conclusion of an agreement to co-produce F-16 aircraft.

In Southwest Asia, we are continuing to improve our defense ties with friends and allies through defense cooperation agreements, more frequent joint and combined exercises, equipment prepositioning, frequent force deployments, and security assistance. We are also providing modern weapons, such as the M1A2 tank to Kuwait and the Patriot antimissile system to Kuwait and Saudi Arabia, to improve the self-defense capabilities of our friends and allies in the Gulf region.

Peace Enforcement and Intervention Operations

The second set of operations for which we must size and shape our forces involves a variety of contingencies that are less demanding than an MRC but still require significant combat forces and capabilities. Such operations may range from multilateral peace enforcement to unilateral intervention.

The types, numbers, and sophistication of weapons in the hands of potential adversaries in such operations can vary widely. For planning purposes, we assume that the threat we would face would include a

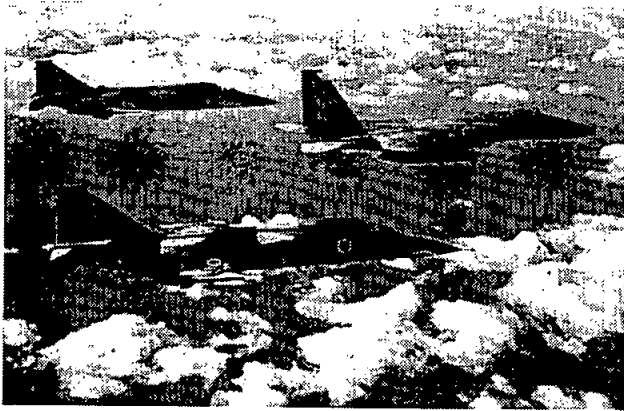
mix of regular and irregular forces possessing mostly light weapons, supplemented by moderately sophisticated systems, such as antitank and antiship guided missiles, surface-to-air missiles, land and sea mines, T-54 and T-72-class tanks, armored personnel carriers, and towed artillery and mortars. Adversary forces might also possess a limited number of mostly older combat aircraft (e.g., MiG-21s, 23s), a few smaller surface ships (e.g., patrol craft), and perhaps a few submarines.

In most cases, U.S. involvement in peace enforcement operations would be as part of a multinational effort under the auspices of the United Nations or some other international body. U.S. and coalition forces would have several key objectives in a peace enforcement or intervention operation, each of which would require certain types of combat forces to achieve:

- Forced entry into defended airfields, ports, and other facilities and seizing and holding these facilities.
- Controlling the movement of troops and supplies across borders and within the target country, including enforcing a blockade or quarantine of maritime commerce.
- Establishing and defending zones in which civilians are protected from external attacks.
- Securing protected zones from internal threats, such as snipers, terrorist attacks, or sabotage.
- Preparing to turn over responsibility for security to peacekeeping units and/or a reconstituted administrative authority.

The prudent level of forces that should be planned for a major intervention or peace enforcement operation is:

- 1 air assault or airborne division
- 1 light infantry division
- 1 mechanized infantry division
- 1 Marine Expeditionary Brigade
- 1 – 2 carrier battle groups
- 1 – 2 composite wings of Air Force aircraft



U.S. F-15 fighter leads two Japanese Self Defense fighters.

- Special operations forces
- Civil affairs units
- Airlift and sealift forces
- Combat support and service support units
- 50,000 total combat and support personnel.

These capabilities could be provided largely by the same collection of general purpose forces needed for MRCs, so long as the forces had the appropriate training needed for peacekeeping or peace enforcement. This means that the United States would have to forgo the option of conducting sizable peace enforcement or intervention operations at the same time it was fighting two MRCs.

Overseas Presence

The final set of requirements used to size general purpose forces are those related to sustaining the overseas presence of U.S. military forces. U.S. forces deployed abroad protect and advance our interests and perform a wide range of functions that contribute to our security.

The Bottom-Up Review reached a number of conclusions on the future size and shape of our overseas presence.

In **Europe**, we will continue to provide leadership in a reinvigorated North Atlantic Treaty Organization (NATO), which has been the bedrock of European security for over four decades. We plan to retain about 100,000 troops in Europe — a commitment that will

allow the United States to continue to play a leading role in the NATO alliance and provide a robust capability for multinational training and crisis response. These forces will include about two and one-third wings of Air Force fighters and substantial elements of two Army divisions, along with a corps headquarters and other supporting elements. Equipment for bringing these in-place divisions to full strength will remain prepositioned in Europe, along with the equipment of one additional division that would deploy to the region in the event of a conflict.

U.S. Army forces will participate in two multinational corps with German forces. Their training will focus on missions involving rapid deployment to conflicts outside of central Europe and on “nontraditional” operations, such as peace enforcement, in addition to their long-standing mission of stabilization of central Europe. These missions might lead, over time, to changes in the equipment and configuration of Army units stationed in Europe. The Air Force will continue to provide unique theater intelligence, lift, and all-weather precision-strike capabilities critical to U.S. and NATO missions. In addition, U.S. naval ships and submarines will continue to patrol the Mediterranean Sea and other waters surrounding Europe.

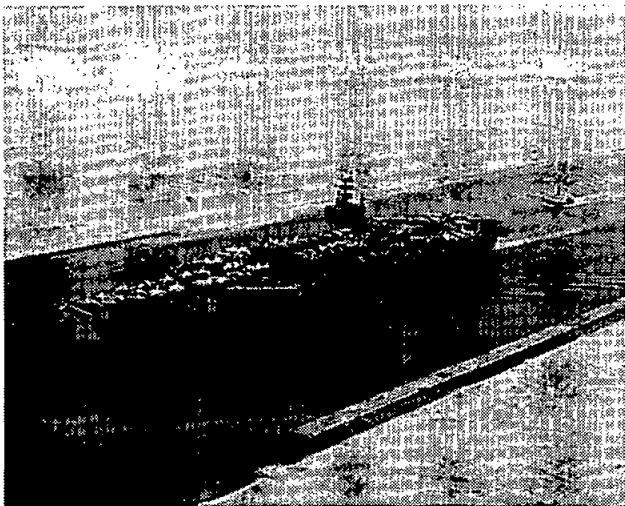
In **Northeast Asia**, we also plan to retain close to 100,000 troops. As recently announced by President Clinton, our commitment to South Korea’s security remains undiminished, as demonstrated by the one U.S. Army division, consisting of two brigades, and one wing of U.S. Air Force combat aircraft we have stationed there. In light of the continuing threat of aggression from North Korea, we have frozen our troop levels in South Korea and are modernizing South Korean and American forces on the peninsula. We are also exploring the possibility of prepositioning more military equipment in South Korea to increase our crisis-response capability. While plans call for the eventual withdrawal of one of our two Army brigades from South Korea, President Clinton recently reiterated that our troops will stay in South Korea as long as its people want and need us there.

On Okinawa, we will continue to station a Marine Expeditionary Force and an Army special forces

battalion. In Japan, we have homeported the aircraft carrier *Independence*, the amphibious assault ship *Belleau Wood*, and their support ships. We will also retain approximately one and one-half wings of Air Force combat aircraft in Japan and Okinawa, and the Navy's Seventh Fleet will continue to routinely patrol the western Pacific.

In **Southwest Asia**, the absence of a large-scale U.S. military presence will continue to necessitate heavier reliance on periodic deployments of forces, rather than routine stationing of forces on the ground. The Navy's Middle East force of four to six ships, which has been continuously on patrol in the Persian Gulf since 1947, will remain. In addition, we plan to keep a brigade-sized set of equipment in Kuwait to be used by rotating deployments of U.S. forces that will train and exercise there with their Kuwaiti counterparts. We also are exploring options to preposition a second brigade set elsewhere on the Arabian peninsula.

These forces have been supplemented temporarily by several squadrons of land-based combat aircraft that have remained in the Gulf region since Operation Desert Storm and, along with other coalition aircraft, are now helping to enforce U.N. resolutions toward Iraq.



The aircraft carrier USS Dwight D. Eisenhower transiting the Suez Canal.

Another significant element of our military posture in Southwest Asia is the equipment prepositioned on ships that are normally anchored at Diego Garcia. In addition to a brigade-sized set of equipment for the Marine Corps, we have seven afloat prepositioning ships supporting Army, Air Force, and Navy forces.

In **Africa**, we will continue important formal and informal access agreements to key facilities and ports which allow our forces to transit or stop on the African continent. We will also deploy forces to Africa, as in recent operations like Sharp Edge (Liberia) and Restore Hope (Somalia), when our interests are threatened or our assistance is needed and requested. Today, more than 4,000 U.S. troops remain deployed in Somalia as part of the U.N. force seeking to provide humanitarian assistance to that country.

In **Latin America**, our armed forces will help to promote and expand recent trends toward democracy in many countries. They will also continue to work in concert with the armed forces of Latin American countries to combat drug traffickers. The United States will also retain a military presence in Panama, acting as Panama's partner in operating and defending the Panama Canal during the transition to full Panamanian control of the waterway in 1999.

Naval Presence. Sizing our naval forces for two nearly simultaneous MRCs provides a fairly large and robust force structure that can easily support other, smaller regional operations. However, our overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed to win two MRCs. The flexibility of our carriers, and their ability to operate effectively with relative independence from shore bases, makes them well suited to overseas presence operations, especially in areas such as the Persian Gulf, where our land-based military infrastructure is relatively underdeveloped. For these reasons, our force of aircraft carriers, amphibious ships, and other naval combatants is sized to reflect the exigencies of overseas presence, as well as the warfighting requirements of MRCs.

U.S. Navy and Marine forces continue to play important roles in our approach to overseas presence operations. In recent years, we have sought to deploy a sizable U.S. naval presence — generally, a carrier battle group accompanied by an amphibious ready group — more or less continuously in the waters off Southwest Asia, Northeast Asia, and Europe (most often, in the Mediterranean Sea). However, in order to avoid serious morale and retention problems that can arise when our forces are asked to remain deployed for excessively long periods in peacetime, we will experience some gaps in carrier presence in these areas in the future.

In order to avoid degradations to our regional security posture, we have identified a number of ways to fill gaps in carrier presence or to supplement our posture even when carriers are present. For example, in some circumstances, we may find it possible to center naval expeditionary forces around large-deck amphibious assault ships carrying AV-8B attack jets and Cobra attack helicopters, as well as a 2,000-man Marine Expeditionary Unit. Another force might consist of a Tomahawk sea-launched cruise-missile-equipped Aegis cruiser, a guided missile destroyer, attack submarines, and P-3 land-based maritime patrol aircraft.

In addition to these “maritime” approaches to sustaining overseas presence, a new concept is being developed that envisions using tailored joint forces to conduct overseas presence operations. These “Adaptive Joint Force Packages” could contain a mix of air, land, special operations, and maritime forces tailored to meet a theater commander’s needs. These forces, plus designated backup units in the United States, would train jointly to provide the specific capabilities needed on station and on call during any particular period. Like maritime task forces, these joint force packages will also be capable of participating in combined military exercises with allied and friendly forces.

Together, these approaches will give us a variety of ways to manage our overseas presence profile, balancing carrier availability with the deployment of other types of units. Given this flexible approach to provid-



B-2 bombers being refueled by KC-10 tanker.

ing forces for overseas presence, we can meet the needs of our strategy with a fleet of eleven active aircraft carriers and one reserve/training carrier.

Nuclear Forces

The changing security environment presents significant uncertainties and challenges in planning our strategic nuclear force structure. In light of the dissolution of the Warsaw Pact, the breakup of the Soviet Union, the conclusion of the START I and II treaties, and our improving relationship with Russia, the threat of a massive nuclear attack on the United States is lower than at any time in many years.

However, a number of issues affecting our future strategic nuclear posture must still be addressed. Tens of thousands of nuclear weapons continue to be deployed on Russian territory and on the territory of three other former Soviet republics. Even under START II, Russia will retain a sizable residual nuclear arsenal. And, despite promising trends, the future political situation in Russia remains highly uncertain.

In addition, many obstacles must be overcome before the ratification of START II, foremost of which are Ukrainian ratification of START I and Ukraine’s and Kazakhstan’s accession to the Nuclear Nonproliferation Treaty as non-nuclear-weapon states —

a condition required by Russia prior to implementing START I. Moreover, even if these obstacles can be overcome, implementation of the reductions mandated in START I and II will not be completed for almost 10 years. Thus, while the United States has already removed more than 3,500 warheads from ballistic missile systems slated for elimination under START I (some 90 percent of the total required), in light of current uncertainties, we must take a measured approach to further reductions.

Two principal guidelines shape our future requirements for strategic nuclear forces: providing an effective deterrent while remaining within START I and II limits, and allowing for additional forces to be reconstituted in the event of a threatening reversal of events.

The Bottom-Up Review did not address nuclear force structure in detail. As a follow-up to the review, a comprehensive study of U.S. nuclear forces is being conducted. For planning purposes, we are evolving toward a future strategic nuclear force that by 2003 will include:

- 18 Trident submarines equipped with C-4 and D-5 missiles.
- 500 Minuteman III missiles, each carrying a single warhead.
- Up to 94 B-52H bombers equipped with air-launched cruise missiles and 20 B-2 bombers.

SECTION IV

BUILDING AN OVERALL FORCE STRUCTURE

Determining the overall force structure needed to provide the building blocks we have identified for new dangers and opportunities rests on the key question: How many of each type of building block might need to be engaged at once? The answer depends on the nature and number of dangers that threaten us at any given time. Figure 6 shows where and how we will need to engage building blocks as the international environment shifts from peacetime to multiple crises or conflicts and back to peace.

In peacetime, we will conduct routine overseas presence operations. Moreover, the nature of the new regional dangers and our recent experience suggests that we will also need building blocks for lower-scale operations such as peacekeeping and peace enforcement, as well as humanitarian assistance and disaster relief activities. Beyond these types of operations, we will routinely hold large forces in "strategic reserve."

Conflict Dynamics

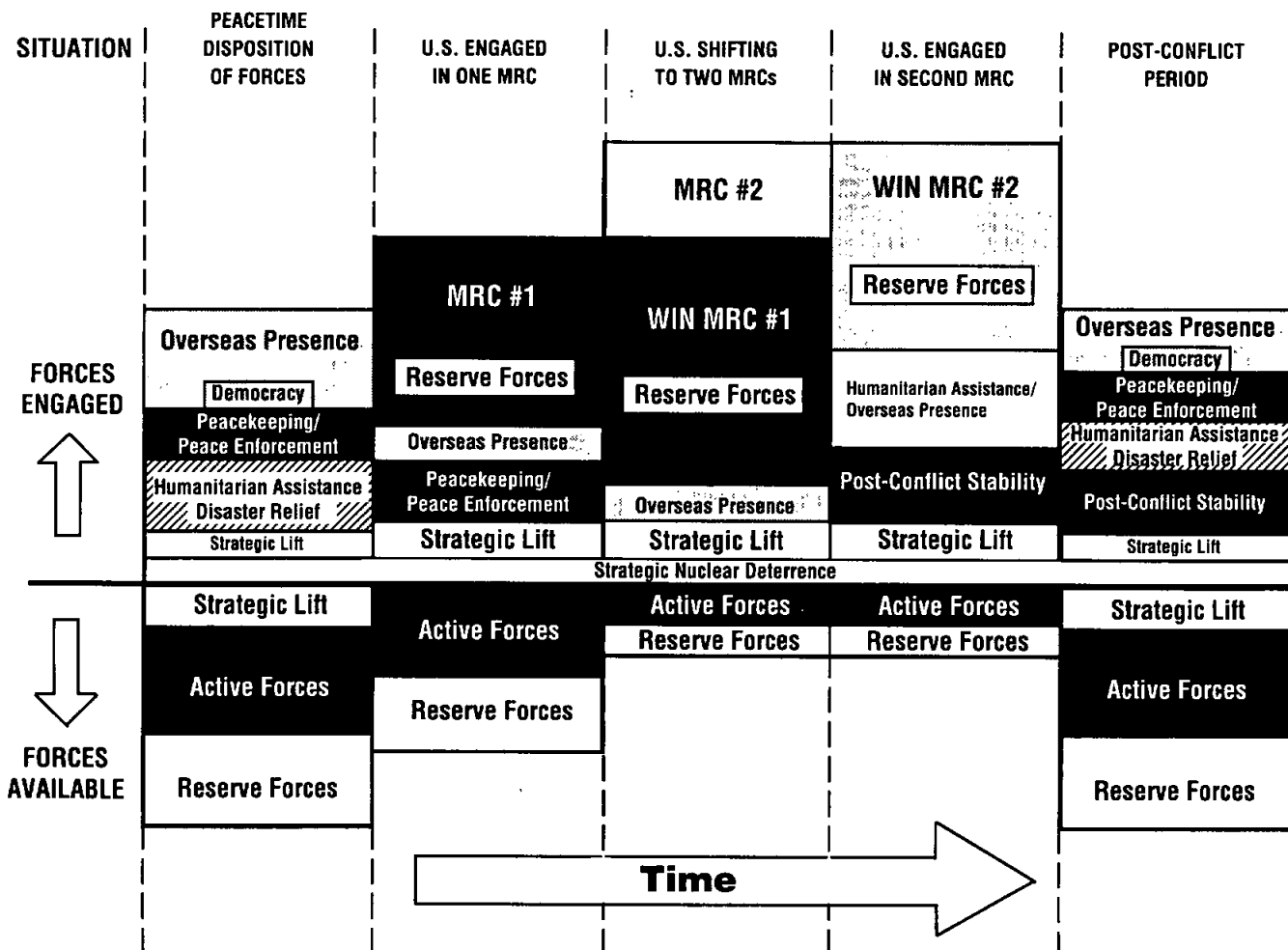


Figure 6

If a major regional conflict erupts, we will deploy a substantial portion of our forces stationed in the United States and draw on our overseas presence forces to put in place the capabilities needed to first halt and then defeat an aggressor. If we feel it is prudent to do so, we can keep other forces engaged in a smaller-scale operation like peacekeeping while responding to a single MRC.

If a second MRC breaks out shortly after the first, we will need to pull together and deploy another building block of forces to assist our allies in the threatened area in halting and defeating the second aggressor. The forces for that effort would come from a further reallocation of overseas presence forces, any forces still engaged in smaller-scale operations, and most of our remaining forces based in the United States. These forces would include a combination of air, ground, and maritime units deployed concurrently with those dispatched to the first MRC. Selected high-leverage and mobile intelligence, command and control, and air capabilities would be redeployed from the first MRC to the second as circumstances permitted. As will be described later, combat forces in the National Guard and reserves would play an important role in creating this building block.

As also shown in Figure 6, while the force building blocks would shift in order to provide the capability to fight two MRCs, there will continue to be a simultaneous requirement for forces and capabilities to maintain strategic nuclear deterrence, conduct overseas presence, peace enforcement, or other types of intervention operations, and provide a strategic reserve of mostly Guard and reserve forces back in the United States.

Once we had won both MRCs, our forces would assume a more routine, peacetime posture. However, as Figure 6 depicts, some forces would probably remain in the regions to maintain stability and to prevent any further problems from arising in the conflicts' aftermath.

Overall Force Structure

On the basis of a comprehensive assessment of U.S. defense needs, the Bottom-Up Review determined that the force structure shown in Figure 7, which will be reached by about the end of the decade, can carry out our strategy and meet our national security requirements.

U.S. Force Structure – 1999

Army	10 divisions (active) 5+ divisions (reserve)
Navy	11 aircraft carriers (active) 1 aircraft carrier (reserve/training) 45–55 attack submarines 346 ships
Air Force	13 fighter wings (active) 7 fighter wings (reserve) Up to 184 bombers (B-52H, B-1, B-2)
Marine Corps	3 Marine Expeditionary Forces 174,000 personnel (active end-strength) 42,000 personnel (reserve end-strength)
Strategic Nuclear Forces (by 2003)	18 ballistic missile submarines Up to 94 B-52H bombers 20 B-2 bombers 500 Minuteman III ICBMs (single warhead)

Figure 7

This force structure will meet our requirements both for overseas presence in peacetime and for a wide range of smaller-scale operations. It will also give the United States the ability to prevail in the most stressing situation we may face — two major regional conflicts occurring nearly simultaneously.

In addition, the force structure provides sufficient capabilities for strategic deterrence and defense. It also provides enough forces, primarily reserve component, to be held in strategic reserve and utilized if and when needed. For example, reserve forces could deploy to one or both MRCs, if operations do not go as we had planned. Alternatively, they could be used to “backfill” for overseas presence forces redeployed to an MRC.

Within this overall force structure, each of the services will be making changes in order to support the defense strategy and provide the capabilities needed to win major regional conflicts quickly and decisively.

Army. Forward stationing of Army forces will be reduced, but greater use of prepositioning will improve the Army’s ability to introduce heavy forces early in a conflict. Battlefield mobility and flexibility will be enhanced through helicopter and other selected modernization programs. Thus, although smaller, the Army will be more capable of delivering decisive combat power early to a distant region.

Navy. While cutting significantly the forces devoted to “blue water” sea control, the Navy is undertaking improvements and innovations in naval air and amphibious lift that will enhance its ability to bring power to bear in a land battle.

Air Force. The Air Force will also be reshaped to increase its ability to bring early firepower to regional battlefields. This will come through utilizing all of its assets — from long-range bombers to short-range strike aircraft — and enhancing their capabilities with improved munitions and the continued introduction of stealth technology. Airlift capabilities will also be modernized to ensure the rapid flow of personnel and equipment to distant regions when needed.

Marine Corps. Through prudent modernization, repositioning, and a high level of training, the Marine Corps will capitalize on its ability to bring ready and well-supported combat capability to a battlefield quickly and effectively.

Analysis of Alternative Force Structures and Mixes

In the analysis supporting the Bottom-Up Review, four separate force structure options were investigated. The options were designed to meet successively more demanding regional defense strategies. Figure 8 illustrates the range of options considered. Option 3 — a force structure adequate to win two nearly simultaneous MRCs — represents, in broad terms, the approach we have chosen.

Option 1 would require the fewest resources, allowing us to reduce the defense budget and redirect excess funds to other national priorities. But, in providing only enough forces and capabilities to fight one major regional conflict at a time, this option would leave us vulnerable to the possibility that a potential aggressor might choose to take advantage of the situation if virtually all of our forces were already engaged in a conflict elsewhere. At a minimum, choosing this approach would require us to scale back or terminate certain existing mutual defense treaties and long-standing commitments, with a corresponding reduction in our influence in those regions where we chose to abandon a major leadership role.

Option 2 frees additional resources for other national priorities, but is premised on the risky assumption that, if we are challenged in one region, respond to the aggression, and then are challenged shortly afterwards in another region, a sizable block of our remaining forces will have the stamina and capability to defeat the first adversary, move to another region possibly several thousand miles distant, and defeat a second adversary. Choosing this option might provide sufficient military strength in peacetime to maintain America’s global leadership, but it would heighten the risk in wartime associated with carrying out a two-MRC strategy.

Force Options for Major Regional Conflicts

STRATEGY	1	2	3	4
	Win One MRC	Win One MRC with Hold in Second	Win Two Nearly Simultaneous MRCs	Win Two Nearly Simultaneous MRCs Plus Conduct Smaller Operation
Army	<ul style="list-style-type: none"> • 8 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 15 Reserve Enhanced-Readiness Brigades 	<ul style="list-style-type: none"> • 12 Active Divisions • 8 Reserve Enhanced Equivalents
Navy	<ul style="list-style-type: none"> • 8 Carrier Battle Groups 	<ul style="list-style-type: none"> • 10 Carrier Battle Groups 	<ul style="list-style-type: none"> • 11 Carrier Battle Groups • 1 Reserve Carrier 	<ul style="list-style-type: none"> • 12 Carrier Battle Groups
Marine Corps	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division
Air Force	<ul style="list-style-type: none"> • 10 Active Fighter Wings • 6 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 14 Active Fighter Wings • 10 Reserve Fighter Wings
			Force Enhancements	

Figure 8

Option 3 provides sufficiently capable and flexible military forces to position the United States to be a leader and shaper of global affairs for positive change. It allows us to carry forward with confidence our strategy of being able to fight and win two major regional conflicts nearly simultaneously. However, it leaves little other active force structure to provide other overseas presence or to conduct peacekeeping or other lower-intensity operations if we had to fight two MRCs at once. If such tasks became necessary, or if either MRC did not evolve as we anticipated, then we might be required to activate significant numbers of reserve component forces. Also key to the Option 3 force's ability to carry out its strategy are a series of critical force enhancements described in Section III, including additional prepositioning of brigade sets of equipment,

increased stocks of antiarmor precision-guided munitions, more early-arriving naval air power, and other initiatives.

Option 4 would allow us to fight and win two MRCs nearly simultaneously while continuing to sustain some other overseas presence and perhaps an additional peacekeeping, peace enforcement, or other intervention-type operation. However, to maintain forces of this size would require significant additional resources, thereby eliminating any "peace dividend" the American people are expecting as a result of the end of the Cold War. Yet our analysis showed that, despite this larger investment, Option 4 would provide only a small increment of increased military capability.

Assessment of Alternative Force Mixes

Each of the four strategy and force structure options was tested by "weighting" the various mixes in favor of land, sea, or air contributions. The analysis indicated that, in some circumstances, placing emphasis on certain types of forces or capabilities could help offset the loss of certain other capabilities or forces. For example, additional ground forces might be able to compensate for the loss of some air contributions when dealing with guerrilla or insurgency threats where terrain is thick and constrained, or where the enemy is not technologically advanced. Alternatively, the substitution of air power for some ground forces might be supportable in cases where terrain is open, the enemy is highly dependent on key industries, resources, or utilities, or heavy armored forces are engaged in some other conventional conflict. Even among air compo-

nents, certain environments or circumstances favor the use of land-based versus sea-based air forces or vice versa.

Nevertheless, while the analysis indicated that a force structure geared toward particular types of forces might enhance overall capabilities under very specific conditions, it would also create serious vulnerabilities under other circumstances. Given the great uncertainty as to where, when, and how future crises might occur, anything but a carefully balanced force will risk ineffectiveness, high casualties, or a failure to meet objectives. The basic conclusion of the analysis was that the balanced force structure we have selected is the best choice to execute our defense strategy and maintain the flexibility needed to deal with the wide range of dangers we may face.

SECTION V: MODERNIZATION

INTRODUCTION

Along with developing a strategy to address new dangers and seize new opportunities, and planning capable and ready forces to carry out that strategy, we must also ensure that America's armed forces remain the best equipped in the world. Thus, as part of the Bottom-Up Review, we conducted a comprehensive evaluation of key modernization programs within the Department of Defense. Throughout the process, a number of considerations helped shape our assessment of future modernization needs and guided our decisions on weapon system acquisitions.

Of foremost concern was operational need. We began with an assessment of the strategies to be carried out by U.S. combatant commanders in the future, evolving threats to which those strategies must respond, and promising approaches to addressing those threats. In the past, our weapons were designed almost exclusively to counter Soviet systems. In the post-Cold War era, our weaponry and equipment must be able to deal with myriad potential threats and with weapon systems of various origin. Moreover, we must be prepared to employ our military systems in a wide range of physical environments and operational settings. Improved interoperability with the forces of other countries is also a high priority.

Second, our evaluation was guided by the prospects for a variety of new technologies to provide substantial enhancements to the capabilities of U.S. weapon systems — those that are already operational as well as those in development. The review took into account the potential contributions of enhanced support systems (such as surveillance and communications assets), advanced munitions, and new major systems, seeking to identify those that could provide the greatest "value added" under a constrained budget.

The technological revolution now taking place has a number of implications for the design and upgrade of military systems:

- In order to take best advantage of technological advances, the entire weapons procurement cycle must be shortened, so that weapon systems fielded today are not dependent on the technology of a decade ago.
- The revolution in weapons technology also suggests that we must reexamine our concepts for employing certain weapons — tanks, aircraft, missiles, and the like — on the battlefield. Advances in information technology, materials, and electronics, if properly incorporated into weapons, hold promise of providing significant advantages for U.S. forces against potential adversaries.

A third important consideration in our modernization review was the changing nuclear threat and its implications for future U.S. defense strategy. Because of the transformation in the relationship between the United States and Russia, as exemplified by the dramatic nuclear reductions called for in the START I and START II treaties, we do not have to invest as many resources in nuclear deterrence as was the case at the height of the Cold War. At the same time, the proliferation of weapons of mass destruction presents a new challenge to U.S. security that must be taken into account and guide our research and development efforts in the coming years.

Finally, ensuring the long-term viability of critical elements of the defense industrial base played a significant role in our deliberations. The defense industrial base will shrink substantially as a result of the reductions in defense spending that have been occurring and are projected for the future. However, it is important that this adjustment be accomplished carefully, with an eye toward preserving those parts of the industrial base that are essential to our long-term defense needs and that would be difficult or costly to reconstitute once lost.

The modernization review focused on major programs that involve the potential for significant investment. These programs include:

- Theater air forces
- Attack and reconnaissance helicopters
- Ballistic missile defense
- Aircraft carriers

- Attack submarines
- Space launch
- Military satellite communications
- V-22 Osprey tilt-rotor aircraft

Summaries of our findings in each of these areas are presented in the remainder of this section.

SECTION V: MODERNIZATION

THEATER AIR FORCES

Theater air forces provide the United States the ability to project military power rapidly and effectively in defense of vital interests. In times of crisis, the prompt availability of these forces helps to deter aggression and protect U.S. and allied interests. If conflicts arise, U.S. air power provides a versatile, fast, and lethal means of countering hostile forces and neutralizing enemy threats in the air, at sea, and on the ground. We saw this vividly demonstrated in Operation Desert Storm.

By virtue of their rapid responsiveness and operational flexibility, theater air forces are well suited to the demands of the new defense strategy. As the focus of planning shifts from global war to regional conflicts, as our overseas presence declines, and as our forces grow smaller, we recognize that theater air forces will undoubtedly play an even greater role in any future conflict in which the United States is engaged. The effectiveness of air operations in the Persian Gulf War underscores the necessity of funding theater air modernization at a level sufficient to maintain our technological edge and our domination of the skies.

The Problem

A number of combat aircraft that were key to our success in Operation Desert Storm and have been the core of our aviation structure for many years are aging and must be replaced. For example, by 1995, the average age of the Navy's inventory of A-6 Intruder medium-attack aircraft will be more than 20 years — the age at which such aircraft have typically been retired — and some will be even older. Other airframes, including the F-15C/D Eagle, F-16A/B Fighting Falcon, and F-14A/D Tomcat, will need to be retired beginning early in the 21st century.

Replacing these airframes is a complex and expensive undertaking involving difficult trade-offs. The selection of replacement aircraft is complicated by several factors and questions that were considered as

theater air modernization requirements were evaluated for the Bottom-Up Review.

First, new aircraft that incorporate important advances in low observability ("stealth"), advanced avionics, greater range and speed, and improved munitions are quite expensive, with the cost per aircraft averaging 30 to 50 percent more than that of current-generation systems. Thus, we must determine how many of what types of these new aircraft are affordable, and what level of technology they should incorporate.

Second, during the Cold War, we sized and shaped our theater air forces to meet the formidable threat of a global conflict with the Soviet Union. With the dissolution of the Warsaw Pact and the Soviet Union, we can reduce the overall size of our combat air structure while selectively modernizing it in order to maintain its superiority over any potential aggressor. In determining how many of what types of new aircraft are needed, we had to carefully assess the projected threats that our aircraft are likely to face in this new, post Cold-War world, both from advanced aircraft and from modern air defenses.

Third, certain modernization requirements are more pressing than others. As mentioned earlier, the A-6 is the airframe in greatest need of early replacement. Our general approach on theater air modernization was to make only those programmatic decisions that needed to be made now in order to correct current deficiencies, while protecting our flexibility in choosing modernization options in the future.

Fourth, while there is only one U.S. Air Force, both the Navy and Marine Corps have sizable tactical aviation elements that include different types of advanced, fixed-wing combat aircraft. Historically, the Air Force and the Navy have developed new combat aircraft separately and individually — efforts at joint development of a single aircraft type to meet the requirements of both services have met with very limited success.

Nevertheless, our review analyzed the potential for substantial cost savings through joint Air Force-Navy development of single aircraft types and components to meet the requirements of both services.

Fifth was the issue of the defense industrial base. With the drawdown in our defense structure comes a reduced need for aircraft production capacity. Currently, nearly all aircraft prime contractors are operating at approximately 50 percent of capacity, and that figure is projected to decline to 40 percent by the year 2000. In looking at modernization options, we had to consider how best to preserve needed aircraft design and production capacity and competitiveness, while allowing the defense companies that remain to transition smoothly to reduced requirements.

Sixth, as we reduce our overall forces and defense funding levels we will not be able to afford several types of special-purpose aircraft. Multirole aircraft capable of air superiority, strike, and possibly support missions have a high "payoff."

While taking account of these issues, we also had to address such related factors as the proper allocation of roles, missions, and functions among the services. For example, the Bottom-Up Review considered how Marine Corps aviation could best be modernized, and how it might be better integrated with the Navy's carrier battle groups. A second "roles and missions" issue was whether naval aviation should continue to stress the capability to strike so-called "deep interdiction" targets – a requirement for which the A-6 and its successor, the A/F-X, are both specifically designed.

The Threat

With the demise of the Soviet Union and the Warsaw Pact, the threats that U.S. combat aircraft will face over the next decade are likely to be less intense than was the case during the Cold War. However, the countries of the former Soviet Union, especially Russia and Ukraine, as well as France and other Western states continue to field sophisticated fighter aircraft and ground-based air defense systems, including high-performance surface-to-air missiles, that in many ways

match and possibly exceed the capabilities of our own currently fielded systems. More important, these countries are aggressively selling their most advanced weapons in the international market, which increases the potential for countries hostile to our interests acquiring far more capable aircraft and air defense systems.

Moreover, Russia, France, and other countries are carrying out sophisticated development programs for aircraft, air-to-air missiles, and surface-to-air missiles with dramatically improved lethality. These systems are likely to be sold internationally over the next decade.

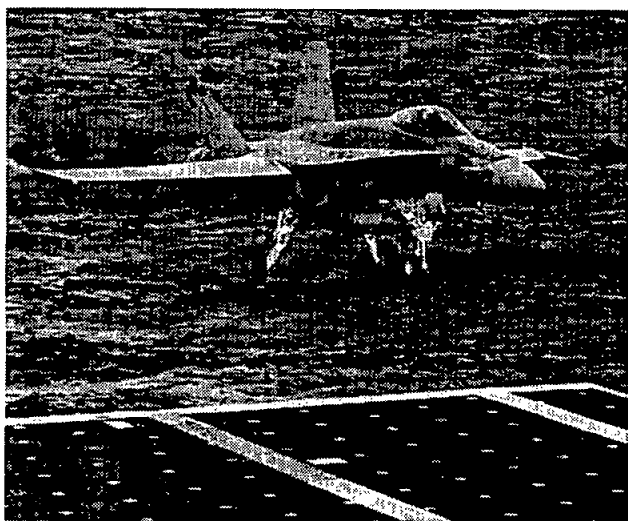
Current Theater Air Programs

Currently, there are a number of theater air modernization programs underway and in various stages of development.

- The F-22 is being developed by the Air Force as its air-superiority fighter for the future. The designated replacement for the F-15 C/D, the F-22 is currently well into engineering development, with procurement scheduled to begin in 1997. The aircraft is slated to enter operation in 2003.

- The F/A-18 E/F aircraft is a derivative of the current multimission, carrier-capable F/A-18 A/B/C/D models. It is considered a relatively low-risk development program that will provide a more advanced fighter and attack capability, including greater payload and range, as well as improved survivability because of enhanced low-observable features. The F/A-18 E/F is to replace some F/A-18s, F-14s, and A-6s beginning in 2001.

- The A/F-X Advanced Strike Aircraft is a multirole, carrier-capable aircraft being developed jointly by the Navy and the Air Force to replace the Navy's A-6 and F-14 fleets and the Air Force's F-111, F-15E, and F-117 aircraft. The A/F-X incorporates stealth technology, along with advanced avionics, countermeasures, and other performance improvements. The aircraft is still in the early developmental stage (concept definition is complete but a specific design



Navy F/A-18 aircraft landing on an aircraft carrier.

has not yet been selected), with initial deployment planned for 2008.

- The Multirole Fighter (MRF) is envisioned as a relatively low-cost but stealthy replacement for the Air Force's F-16 multirole aircraft, and perhaps for Navy and Marine Corps F/A-18 aircraft, beginning in 2015.

The dilemma we faced as we began the Bottom-Up Review was a recognition that, given the tremendous costs entailed in buying these aircraft, proceeding with all of them as planned would absorb a significant percentage of our overall research and development and procurement funding both in the near term and beyond.

The total cost for all four programs has been estimated to be almost \$320 billion in FY 1994 dollars. Much of this funding would be required in the years beyond the 1994-99 Future Years Defense Program (FYDP) — the so-called “bow wave” effect — meaning that decisions taken now on aircraft modernization will affect how we spend scarce procurement dollars for years to come. Even within the FYDP period, costs would be significant, totaling over \$33 billion. Thus, to pursue all of these programs simultaneously would have meant deferring or canceling other vital weapons modernization programs over the next decade. We needed to examine alternatives.

Options Examined

Several alternative strategies for modernizing our theater air forces were considered. The options were evaluated in terms of their costs and capabilities, responsiveness to operational requirements, and other parameters.

The various modernization options were assessed against postulated threats during three different time periods (2003, 2013, 2023) in a large-scale theater air campaign. The results indicated that options of similar cost produced relatively equal levels of effectiveness, with no single option standing out as the most cost-effective. This led to the conclusion that no single modernization option identifiable at this time could best meet our anticipated theater air requirements for the next thirty years.

Accordingly, we elected to take a different approach — making only the theater air decisions that need to be made today and preserving maximum flexibility for future program choices.

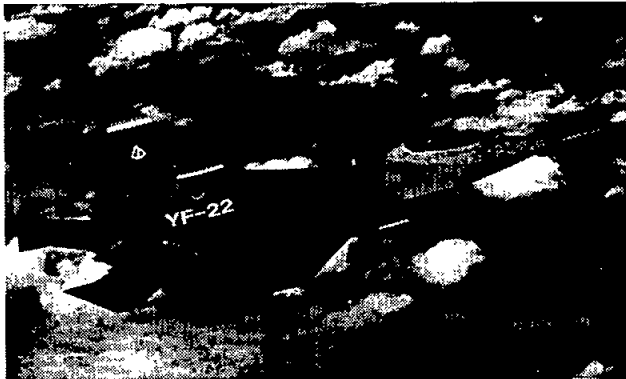
The Decision

The incremental approach we have adopted makes the decisions that must be made now: (1) replacing the Navy's aging A-6 ground attack aircraft, and (2) proceeding with the F-22 to ensure technology dominance. In summary:

- We will proceed with development and procurement of the F/A-18 E/F to achieve initial operational capability in 2001. Once production of the E/F version has begun in 1997, production of the F/A-18 C/D model will be terminated.
- We will retire all A-6 aircraft by 1998. To help compensate for the A-6's retirement, we will upgrade the F-14 with a limited ground-attack capability.
- We will also proceed with development and procurement of the F-22, looking toward an initial operational capability by 2003. The F-22's

quantum improvements in stealth, "supercruise" capability, and avionics will make it the best air-superiority fighter in the world for the foreseeable future. We will also incorporate a precision ground-attack capability into the F-22 at the very outset of production, thus providing a multirole capability that greatly improves the aircraft's utility and cost-effectiveness.

- We will cancel the A/F-X and the MRF. We also plan to terminate all production of the F-16 after FY 1994. These actions will save significant funds both over the FYDP period and in future years.



Developmental version of Air Force's F-22 aircraft.

Additionally, we will launch a Joint Advanced Strike Technology Program that focuses on developing common components for future engines, avionics, ground support, training, munitions, and advanced mission planning. The technologies pursued under this program could be used with any future combat aircraft the nation decides to build. These common technologies account for the bulk of the cost incurred in acquiring and operating aircraft. Different airframes — the chief differentiator between land-based and carrier-based aircraft — are a lesser part of overall aircraft costs. Thus, we are aiming for a combat aircraft that, in terms of cost, is 80 percent "joint," although there may be different airframe silhouettes. We believe this will significantly reduce development and production

costs for the next generation of Navy and Air Force aircraft, even if we elect to proceed with different airframes.

The Joint Advanced Strike Technology program will develop several technology demonstrator aircraft to explore different technologies that could be incorporated into future aircraft. From these technology demonstrators, prototype aircraft would then be developed to help choose the next-generation replacement for the A-6, F-14, F-16, and F-111 as they reach the end of their service lives.

We will also strengthen supporting capabilities. First, this involves a joint munitions program to ensure that high-leverage, highly accurate weapons (such as the Joint Standoff Weapon and Joint Direct Attack Munition) are available to destroy targets with minimum collateral damage. Second, we will improve our targeting capabilities so that we can better utilize these weapons. Third, we will improve the conventional bombing capabilities of our long-range B-1, B-2, and B-52 bombers.

Our program will also protect the industrial base necessary to meet projected theater air modernization needs. Production of both the F/A-18 E/F and the F-22 at modest annual rates will allow us to preserve aircraft production lines for other future needs. Development of these aircraft, as well as our joint advanced technology program, will allow us to maintain critical aircraft design teams.

This approach to theater air modernization — proceeding with the F/A-18 E/F and F-22, and with a robust technology development and demonstration effort to lay the foundation for future aircraft selection — provides a sound combination of programs that responds to foreseeable mission requirements, affordability concerns, a new threat environment, and priorities for replacement, while simultaneously preparing for future operational needs.

SECTION V: MODERNIZATION

ATTACK AND RECONNAISSANCE HELICOPTERS

The Army has two main types of armed helicopters: attack and reconnaissance. Attack helicopters engage and destroy armored vehicles and other enemy targets. Reconnaissance (or "scout") helicopters perform intelligence-gathering, surveillance, and target acquisition and designation missions.

Army combat helicopters contribute in important ways to the new post-Cold War defense strategy. In times of crisis, they can either self-deploy or be airlifted to distant areas, arriving in significantly less time than ground forces. Moreover, they provide substantial combat power relative to the amount of air transport required to deploy them. With their ability to adapt and perform multiple roles on the modern battlefield, combat helicopters are key contributors to the Army's ability to conduct the fast-paced, maneuver-type warfare that we expect to dominate future conflicts.

The Army currently has about 3,300 combat helicopters of five different types: the OH-6 and OH-58A/C Kiowa, which are reconnaissance helicopters; the AH-1 Cobra and OH-58D Kiowa Warrior, which perform armed reconnaissance and attack missions in support of light forces; and the AH-64A Apache, an attack helicopter. Under the Aviation Redesign Initiative, the Army is reducing the size of its helicopter fleet as part of its overall force reduction, while modernizing the helicopter forces that remain.

The Problem

The majority of OH-58 A/Cs and AH-1s have met or exceeded their expected service life of 20 years and are in need of replacement. The OH-58D and AH-64 are newer, but have not been produced in the quantities or with the capabilities needed to meet all of the Army's attack and reconnaissance requirements.

In addition, recent joint exercises and operations, including Operation Desert Storm, have identified a number of operational shortfalls in the armed recon-

naissance/light attack helicopter fleet. These include limited night and adverse weather capability; inadequate reliability, maintainability, and supportability; insufficient survivability; inability to destroy the full range of ground targets; limited shipboard compatibility; limited air-to-air combat capability; and other deficiencies.

Army Aviation Modernization Plan

During the previous administration, the Army developed a modernization plan for attack and reconnaissance helicopters that included three main components:

- Modifying existing AH-64As to the AH-64 C/D Longbow configuration. The mast-mounted Longbow fire control radar enhances the survivability and targeting capability of attack helicopters. It allows them to fire rapidly on large numbers of air or ground targets, even in adverse weather, when used in conjunction with an advanced Hellfire missile. After firing the current laser-guided Hellfire, a helicopter must remain in the vicinity of the target in order to guide the missile while it is in flight; this exposes the helicopter to enemy fire. The Longbow Hellfire uses a new "fire and forget" guidance system that does not require a designator, thus improving helicopter survivability. Approximately 227 Apaches would be modified to the "D" version and another 529 would become AH-64 Cs. The D models would receive Longbow radars, new improved engines, and other enhancements. The AH-64 Cs would receive modifications enabling them to carry and fire Longbow Hellfire missiles, but they would not actually be outfitted with the new fire control radar.

- Procuring the RAH-66 Comanche helicopter for the armed reconnaissance mission or attack mission in support of light forces. The plan was to buy approximately 1,300 Comanches, of which about one-third would be equipped with a downsized Longbow

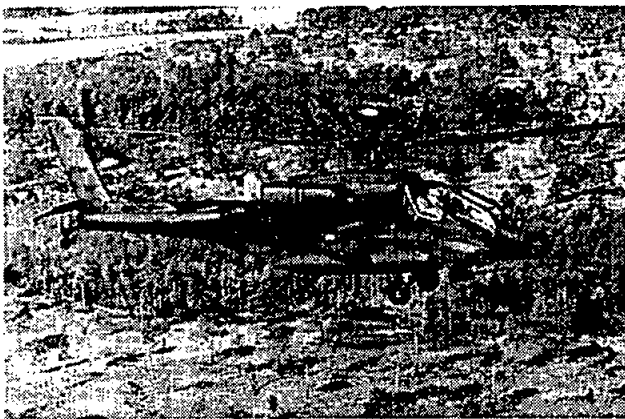
system. The Comanche is a state-of-the-art helicopter that provides better self-deployability, greater night and adverse weather capability, improved lethality and air combat capability, higher survivability and reliability, and lower operating and support costs.

- Purchasing additional OH-58D helicopters until the Comanche is introduced. To fill the near-term gap in production until the Comanche is deployed, approximately 350 OH-58D Kiowa Warriors would be purchased and fielded as interim armed reconnaissance/light attack helicopters. This element of the Army's plan has, in fact, already been mostly funded, with production scheduled to be completed in FY 1995.

The Threat

The primary threats to attack and reconnaissance helicopters are surface-to-air missiles and anti-aircraft artillery. These weapons are relatively inexpensive, often simple to operate, and are found in very large numbers worldwide. Other attack helicopters armed with air-to-air missiles and cannons could also pose a threat.

In the past, our helicopter forces were designed primarily to counter Soviet air defenses and combat aircraft. In the post-Cold War era, our principal concern in considering attack and reconnaissance helicopter requirements is the air defenses, combat aircraft, and missiles projected to be deployed by regional



AH-64 Apache helicopter with Longbow radar.

powers we might have to face. In assessing the utility of the Longbow system on the AH-64D and RAH-66, we also need to consider existing and projected future techniques of concealment and countermeasures that could reduce Longbow's effectiveness.

As with other types of weapons, the demise of the Soviet Union and the need for hard currency by the former Soviet republics has meant that Soviet weapons, including advanced air defense systems and combat helicopters, are being exported in significant number. Other European countries are also manufacturing and marketing such systems. As these weapons proliferate, the threat emerging in some regions, particularly the Middle East, could approach that previously found only in Europe, although inventory levels and the capability to integrate air defenses could be a limiting factor. This prospect makes the survivability, lethality, and other enhancements of the RAH-66 and AH-64D Longbow a priority.

Options Examined

Three options for modernizing the attack and reconnaissance helicopter force were examined:

- **Option 1** would maintain the previously planned modernization program, procuring and fielding both the AH-64 C/D with Longbow and the RAH-66 Comanche. One-third of the RAH-66 fleet would be fielded with the Longbow fire control radar. The Army's AH-1 and OH-58 A/C and D helicopters would be phased out as the new systems became operational.

- **Option 2** would terminate the RAH-66 program but retain the AH-64 C/D. The AH-64 modification program would be the same as under Option 1, except that additional AH-64s would be purchased to perform the heavy attack mission. Additional OH-58D aircraft would be procured to perform the light attack/armed reconnaissance mission. This option also phases out the Army's AH-1s and OH-58 A/Cs.

- **Option 3** would terminate the AH-64 C/D modification program and procure and field the RAH-66 without the Longbow radar. The Longbow radar

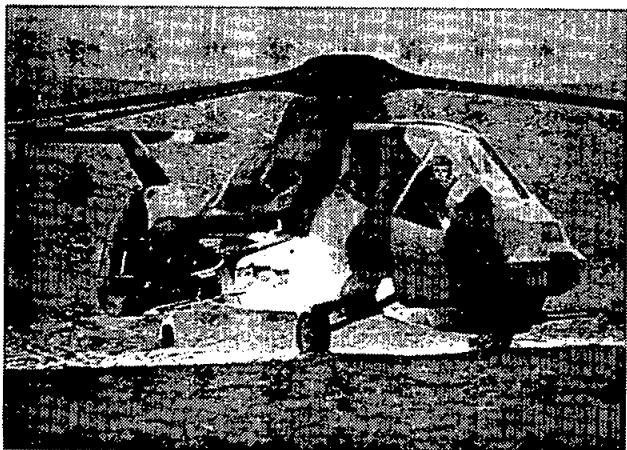
would be returned to a technology base program until the technology has further matured. No Longbow-capable Hellfire missiles would be procured. The AH-1 and OH-58 A/C and D would be phased out.

A fourth option that would have terminated both the AH-64 C/D and the RAH-66 was considered in the initial stages of the review. That option was rejected because it did not meet the combat helicopter requirements of the new defense strategy.

Marine Corps attack/reconnaissance helicopters were excluded from the review. The Marine Corps does not employ armed reconnaissance helicopters, and the AH-1W is its only attack helicopter. The AH-1W is a shipboard-compatible system currently produced at the rate of 12 per year. Altering this program by the introduction of an additional type of helicopter or replacing the AH-1W in the near term would not offer any cost savings or increase the effectiveness of Marine Corps attack helicopters. However, the Bottom-Up Review did look at replacing the Army's Comanche helicopter with the AH-1W and determined that it was not the best option.

Evaluation of Options

The options were evaluated according to four criteria: (1) combat effectiveness; (2) technical risk; (3) acquisition and life-cycle cost; (4) and effects on the defense industrial base.



RAH-66 Comanche helicopter.

Much of the analysis was derived from previous studies. Those earlier studies had looked at a range of scenarios and threat levels, involving company through corps-level missions, and they included evaluations of the lethality, survivability, sustainability, and deployability of alternative helicopter forces.

A group of outside experts was asked to evaluate the analysis conducted for the Bottom-Up Review. The group concluded that there was some technical risk associated with Longbow's development. One such risk was the radar's inability to recognize and identify, as well as detect and classify, stationary ground targets at the longer ranges from which it could enable missiles to be fired. This poses a potential "identification of friend and foe" problem. But the group concluded that the risk was manageable, and that the advantages of the system, even if this full capability cannot be obtained, make it a very cost-effective force enhancement.

The cost analysis led to the conclusion that modernization is not the major contributor to the total cost of any option. Longbow adds approximately 10 percent to the life-cycle cost of Options 1 and 3, and the Comanche constitutes about one-third of the cost of Option 1. Overall, Option 3 is the lowest-cost near-term option, but it saves little over the long term. Option 2 saves little during the FYDP period, but it does reduce long-term costs significantly.

The industrial base assessment concluded that the modernization options could all be executed with the current helicopter industrial base, which has considerable excess design, engineering, and production capacity. Option 3 would probably lead to the loss of one prime contractor, but it would increase the utilization of the other three major helicopter manufacturers. If both the RAH-66 and V-22 were developed and fielded, the United States would probably retain its more than 50 percent share of the world's civil and military helicopter market. Without these programs, that figure would drop to 40 percent.

Option 1. The previously planned program provides significant improvements in both lethality and survivability and solves many of the current deficiencies in night and adverse weather capability. It provides a balanced, deployable, and sustainable fleet. But it also is the most costly of the three options at any of the force levels considered.

Option 2. By terminating the RAH-66 program, this option emphasizes near-term improvements in the attack helicopter inventory but leaves major deficiencies in armed reconnaissance capabilities. The technical risks associated with the Longbow program remain. Option 2 is the least costly of the three alternatives over the program lifetime, but it costs more in the near term because of the investment in OH-58Ds and improved AH-64s.

Option 3. By terminating Longbow but proceeding with the RAH-66, this option makes long-term improvements in scout and armed reconnaissance capability, but only modest upgrades to attack capability. Although it is the lowest-cost near-term alternative, Option 3 offers the least improvement in antiarmor capability while abandoning Longbow's potentially high cost-effectiveness if deployed on both the AH-64 and RAH-66.

The Decision

We have decided to proceed with Option 1 — fielding both the RAH-66 Comanche and AH-64 C/D with Longbow — for a variety of reasons. First, the cost during both the FYDP period and beyond is not a significant discriminator, given the improvements in capability both systems provide.

Second, proceeding with both Apache (Longbow) and Comanche yields capabilities that are complementary and not directly substitutable for one another. The RAH-66 provides significant improvements in all mission areas and alleviates age and operational shortfalls in the reconnaissance/scout fleet. It also brings technical advances in stealth and avionics. Although the value of reconnaissance is difficult to measure, our experience in the Persian Gulf War and other recent operations has shown that the battlefield information that reconnaissance helicopters provide is becoming increasingly important in modern warfare. Longbow will enhance the survivability, lethality, and target detection capability of both armed reconnaissance and attack helicopters. While it will require a significant investment in the near term, this expenditure will yield real dividends in the longer term. However, the technical and cost-growth risks associated with both Longbow and Comanche will need to be monitored and carefully managed, since both systems are on the cutting edge of technology and have significant development time remaining.

SECTION V: MODERNIZATION

BALLISTIC MISSILE DEFENSE

Throughout the Cold War, both the United States and the Soviet Union conducted research and development on ways to defend against nuclear-armed ballistic missiles. With the signing of the Anti-Ballistic Missile (ABM) Treaty in 1972 banning nationwide ABM systems, the issue of ballistic missile defense (BMD) was relegated to a less prominent status. Beginning in March 1983, ballistic missile defense gained new prominence with the unveiling of the Strategic Defense Initiative (SDI). Throughout the next decade, the SDI program engendered significant debate with regard to its viability and cost.

The Problem

Despite a decade of research and an investment of \$30 billion, most experts inside and outside the Department of Defense agree that we are far from deploying a highly effective defense against a large-scale missile attack. Furthermore, as a result of the strategic arms reduction agreements recently negotiated with the former Soviet Union and the dissolution of that country, the principal threat against which such a system was originally designed has drastically declined.

In response to these developments, and because the Congress had consistently failed to fund the scale of SDI program that the executive branch proposed, the Bush Administration refocused SDI toward a more limited defense of the United States and its allies, called Global Protection Against Limited Strikes (GPALS). The Bush program called for spending an additional \$39 billion for ballistic missile defense in FY 1995-99 — an amount that would have constituted a significant portion of the modernization dollars in the DoD budget.

In his FY 1994 defense budget request, President Clinton decided to scale back investments in missile defenses from \$6.3 billion under the Bush plan to \$3.8 billion. This reduction reflected this Administration's skepticism about the need for early deployment of a

national missile defense and a desire both to reorient the program toward theater missile defense and to fund overall missile defense research and development at a sustainable level.¹

The Bottom-Up Review thus examined U.S. missile defense requirements from a perspective of identifying options that could meet future needs at an affordable cost.

The Threat

There are three general categories of long-range missile threats to the United States: deliberate attacks by the former Soviet Union or China, accidental or unauthorized launches from those countries, and the emergence of new long-range missile threats from potentially hostile nations.

If Ukraine, Belarus, and Kazakhstan ratify and implement START I and join the Nuclear Nonproliferation Treaty as nonnuclear states, Russia will be the only country of the former Soviet Union possessing missiles capable of reaching the United States. Once START II is implemented, Russian strategic nuclear forces will be much smaller than they are today and strategic modernization is expected to proceed at a slower pace. While China also has a few nuclear missiles that could reach the United States, its strategic nuclear force is quite small now, and it is likely to grow slowly in both size and capability over the next decade. A deliberate attack by Russia or China on the United States would appear to be highly unlikely.

Accidental or unauthorized launches of Chinese or former Soviet nuclear missiles are also considered

¹ The term *theater missile defense* (TMD) refers to defenses against shorter-range theater and tactical missiles that might be used against forward-deployed U.S. forces or U.S. allies. A *national missile defense* (NMD), by contrast, would defend against long-range strategic missiles that might be used to attack the United States directly.

unlikely. Both countries appear to maintain effective nuclear weapon control procedures to preclude such an event.

Finally, while no other potentially hostile nation currently possesses the capability to threaten the United States with ballistic missiles (and probably none will acquire such a capability for the next several years), the possibility of a limited ballistic missile threat from the Third World sometime in the first decade of the next century cannot be excluded.

However, a different threat of particular concern in the post-Cold War period is the proliferation of shorter-range ballistic and cruise missiles armed with nuclear, biological, or chemical warheads. Ballistic and cruise missile deployments are expected to increase worldwide, despite stepped-up efforts to inhibit their proliferation, and several countries other than the acknowledged nuclear states are developing both nuclear weapons and ballistic missiles. Similarly, a number of countries have or are developing chemical or biological weapons that could be delivered by ballistic or cruise missiles.

Treaty Compliance

The ABM treaty, as amended in 1974, permits a single missile defense site equipped with ground-based tracking and guidance radars and up to 100 fixed, land-based interceptor missiles. The treaty prohibits mobile land-based, air-based, sea-based, and space-based ABM systems or components. The Bottom-Up Review considered program options that are treaty compliant as well as options that would require relief.

One option would be to deploy an ABM system that could provide a limited defense of the continental United States against a small-scale missile attack. Such a system, deployed at a single site in Grand Forks, North Dakota, would consist of a ground-based radar (GBR), 100 ground-based interceptors (GBIs), and upgrades to our existing early-warning radar system. While such a system would provide nationwide coverage against some types of attacks, levels of protection for substantial areas of the eastern and western United

States would be inadequate in the event of other attacks.

Other options involve multiple sites, additional interceptor missiles, and/or reliance on missile tracking information from space-based sensors. These options are being examined in the context of a Presidential review of our BMD program and the ABM treaty. They raise ABM treaty compliance issues that must be resolved within the government and within the framework of our dialogue with Russia and perhaps other countries of the former Soviet Union before development or deployment could proceed. The present political instability in Russia could make it very difficult to negotiate such modifications to the ABM treaty for the foreseeable future.

Core Theater Missile Defense Program

To meet the growing threat from shorter-range theater ballistic and cruise missiles, the Bottom-Up Review considered a range of theater missile defense options. All options include a "core" set of TMD systems consisting of an enhanced version of the existing land-based Patriot air and missile defense system, called Patriot Advanced Capability, Level-3 (PAC-3); the sea-based Aegis/Standard Missile Block IVA; and the land-based Theater High-Altitude Area Defense (THAAD) missile system (see Figure 9).

Patriot Advanced Capability Level - 3. Our current ability to intercept shorter-range ballistic missiles is limited to the Patriot PAC-2 missile, which was used with partial success against modified Iraqi Scud missiles during the Gulf War. The immediacy of the tactical ballistic missile threat argues strongly for rapid deployment of improved theater missile defenses, such as PAC-3, that provide greater lethality and range, and are more capable against longer-range threats. PAC-3 would include an improved radar and either an upgraded Patriot missile or a new "hit-to-kill" interceptor missile.

The Aegis/Standard Missile Block IVA. The Navy currently deploys many cruisers and a growing number of destroyers equipped with Aegis radars and

Standard missiles for air defense operations. The Block IVA program would capitalize on this existing infrastructure by fielding upgraded Standard missiles and a modified Aegis radar to provide a sea-based TMD capability and improved performance against antiship cruise missiles. In some circumstances, a naval TMD capability could be in place in the vicinity of a regional conflict, providing protection for land-based targets before hostilities break out or before land-based defenses can be transported to the theater.

Theater High-Altitude Area Defense System.

While modifications of existing systems can deal with most existing ballistic and cruise missile threats, the THAAD system is included in the core TMD program because additional capabilities will be needed to counter more advanced threats anticipated in the future. THAAD would defeat longer-range ballistic missiles, thereby minimizing the effects of weapons of mass destruction on the ground, and would also defend a larger area. When combined with either PAC-3 or the Standard Block IVA missile as a lower defensive tier,

THAAD would anchor a highly effective layered defense of critical assets.

Brilliant Eyes. Brilliant Eyes (BE) missile tracking satellites offer the potential for significantly enhancing the capabilities of the core theater missile defense effort. Brilliant Eyes satellites would provide an autonomous missile surveillance and tracking capability for a number of regions of interest, or if cued by global surveillance satellites, they could observe missiles soon after launch. The unique contribution of BE is high-precision midcourse tracking, which allows interceptors to be launched when incoming missiles are still beyond the range of land- or sea-based radars. This means that intercept ranges would increase, particularly for long-range, wide-area defensive systems such as THAAD.

Brilliant Eyes missile tracking data could also be used for interceptor guidance updates, further increasing the defended area and offering a hedge against radar countermeasures or the loss of a radar. In

Theater Missile Defense

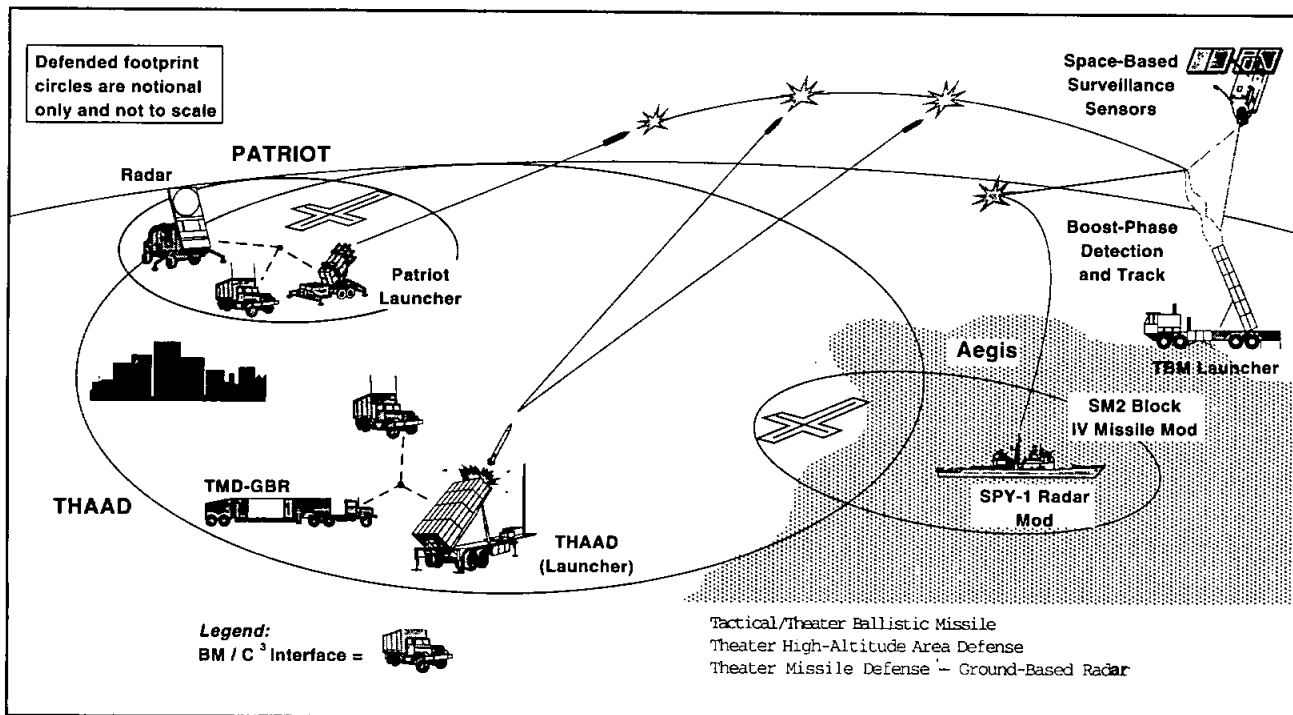


Figure 9

peacetime, the BE constellation could help collect intelligence data on emerging threats. A DoD working group is examining whether Brilliant Eyes might also have a role to play in fulfilling future strategic early-warning and surveillance requirements.

Additional TMD Programs

In addition to the core TMD program and Brilliant Eyes, the Bottom-Up Review examined the advantages and costs of proceeding with several other proposed TMD programs: a sea-based upper-tier program, the Army's Corps Surface-to-Air Missile (SAM) system, and ascent/boost-phase intercept capabilities.

Sea-Based Upper Tier. All sea-based concepts for higher-altitude missile ("upper tier") intercepts take advantage of the Vertical Launch System on naval combatants and offer very long-range intercept potential when supported by BE or some other over-the-horizon sensor. This is particularly true for concepts using an upper-stage intercept element based on Lightweight Exoatmospheric Projectile (LEAP) technology and carried by the Standard missile. These sea-based systems could provide extensive area protection.

Corps SAM. This new mobile air and missile defense system would protect Army or Marine maneuver forces against short-range ballistic missiles and advanced cruise missiles fired from any direction. In addition, Corps SAM would be more transportable, more mobile, and have more on-line missiles per battery than the Patriot PAC-3.

Ascent/Boost-Phase Intercept. We will also investigate the feasibility of defensive systems having earlier intercept capabilities so that enemy missiles could be destroyed while they are still ascending. This would be a joint Air Force-Ballistic Missile Defense Organization (BMDO) program.

TMD Options

Four TMD options that build on the core program were examined. The options differ with respect to the

ways in which they supplement the core program and the time period in which the additional programs they provide would proceed through the acquisition process.

Option 1: Core TMD Program Plus Sea-Based Upper Tier and Corps SAM. This option, consisting of the core TMD program (PAC-3, THAAD, Standard Missile Block IVA) plus both the Sea-Based Upper Tier and Corps SAM systems, was the Bush TMD program. Proceeding with all five of these major system acquisitions would require about \$14 billion in investment funding for TMD during FY 1995-99. This option would create a significant bow-wave problem in the period beyond the FYDP, due to the large number of systems acquired during the initial years.

Option 2: Core Program Plus Sea-Based Upper Tier. This option consists of the core TMD program plus the Sea-Based Upper Tier system and a less vigorous development effort for Corps SAM. Under this option, Corps SAM would not enter the demonstration/validation phase any earlier than FY 1998. About \$12 billion would be needed in FY 1995-99 to implement the option. Post-FYDP acquisition funding would increase modestly.

Option 3: Core Program and Technology Demonstration. This option would pursue the core TMD acquisition program plus a technology demonstration only for the Sea-Based Upper Tier. Depending on the success of the technology demonstration effort, the Sea-Based Upper Tier system could transition to an acquisition program in FY 1998. Alternatively, development of Corps SAM could be started at that time. The estimated FY 1995-99 cost of this option is about \$10 billion; no significant post-FYDP funding bow wave is projected.

Option 4: Core TMD program. This option consists of the core TMD program only, delaying the start of any additional acquisition program — Sea-Based Upper Tier or Corps SAM — until at least FY 1998. This option would require about \$9 billion in funding in FY 1995-99 and about the same level of expenditure in FY 2000-06.

National Missile Defense Options

In evaluating options for national missile defense, three main factors were considered: technological promise, responsiveness to the projected threat, and ABM treaty compliance. Various NMD architectures were examined, consisting of the Ground-Based Radar and the Ground-Based Interceptor, with and without Brilliant Eyes. In addition, four different development approaches were analyzed.

Option 1: Standard Acquisition Program. This option would cost approximately \$10 billion over the FYDP period. If started now, it could provide an initial operational capability by the year 2004. Pursuit of this type of NMD program might be appropriate if the likelihood that a potential adversary (e.g., Libya, Iraq, or North Korea) might acquire an intercontinental ballistic missile (ICBM) capability by 2004 was substantially higher than it currently appears to be.

Option 2: Systems Technology Demonstration Approach. This option would cost about \$7 billion over the FYDP period. It envisions conducting enough development to ensure that the United States — given the knowledge of an emerging threat and the decision to start development — would have the capability to deploy a prototype ground-based system within about five years and production-quality hardware in about eight years. Although this approach could save \$3 billion to \$4 billion during FY 1995-99 relative to the first option, the total expenditure for a single, fully configured site (with production equipment) would be considerably more than if a standard acquisition program were started now. The specific option considered would permit a prototype deployment by 2003 (given a decision in 1999 to do so), with the first production hardware available in 2007.

Option 3: NMD Technology Program Plus Brilliant Eyes. This option would cost \$3 billion over the FYDP years, including about \$200 million annually for acquisition of Brilliant Eyes. It preserves a capability in the key technologies being investigated for NMD. Under this approach, it would take 10 to 15 years to deploy an operationally effective system from

the time a decision was made to do so. Cost savings relative to Option 1 would be \$7 billion to \$8 billion during FY 1995-99. The NMD technology alternative would, in conjunction with TMD activities, preserve an adequate industrial base in critical technology areas.

Option 4: NMD Technology Program Without Brilliant Eyes Acquisition. This option would cost about \$2 billion over the FYDP period. It is similar to the third option, except that a Brilliant Eyes acquisition program is not included. Option 4 would provide cost savings (relative to Option 1) of \$8 billion to \$9 billion during the FYDP years.

The Decision

In considering the proper approach to ballistic missile defense, the Bottom-Up Review examined a range of program options that emphasized theater missile defense, national missile defense, both TMD and NMD, or neither. The options ranged in cost from \$15 billion to \$25 billion, although each would generate significant savings compared with the Bush Administration's planned \$39 billion expenditure on ballistic missile defense during FY 1995-99.

Given the nature of the present and projected threat from ballistic and cruise missiles armed with weapons of mass destruction, a decision was made to emphasize protection of forward-deployed U.S. forces in the near term and to proceed with a more robust TMD program, combined with a more limited NMD technology program.

On TMD, we have decided to pursue Option 2 — a TMD program that includes PAC-3, the Standard Missile Block IVA, THAAD, and the Sea-Based Upper Tier system, all funded as major acquisitions in FY 1995-99. We will also examine the feasibility of ascent/boost-phase intercept capabilities. Development of PAC-3 will allow major work on Corps SAM to be deferred until FY 1998.

On NMD, we will fund a technology program at approximately \$600 million per year as a hedge against

the emergence of a greater long-range missile threat than is now projected. This program, in conjunction with the recommended TMD option, will preserve an adequate technology base in critical ballistic missile defense areas.

Specifically, Brilliant Eyes, or an equally effective alternative, would continue as a technology program; ground-based radar technology would advance through the GBR program for THAAD; and existing interceptor technology efforts, including THAAD and LEAP (if selected for the Sea-Based Upper-Tier system), would provide a development path to a ground-based interceptor for NMD.

Overall, the ballistic missile defense program will require an investment of approximately \$18 billion over the FYDP period, with about two-thirds (or \$12 billion) of the total expenditure directed toward TMD. This will provide a savings of about \$21 billion compared with the previous Administration's BMD program.

We believe the recommended overall BMD program — a robust TMD effort plus a limited NMD technology program — is the best and most cost-effective approach. It is both consistent with our current understanding of the likelihood of a limited missile attack against the United States and provides the capabilities needed to defeat the more pressing theater ballistic and cruise missile threats.

SECTION V: MODERNIZATION

AIRCRAFT CARRIERS

New aircraft carrier procurement represents a significant investment for the Navy. In evaluating future requirements, the Bottom-Up Review assessed aircraft carrier modernization needs in light of the new international security environment. Modernization options — both new procurement and overhaul of existing carriers — were examined in the context of alternative carrier force levels. The review focused on procurement of CVN-76, the next new carrier the Navy has requested.

The review also examined the potential budgetary savings and other implications of consolidating nuclear aircraft carrier and submarine construction at a single shipyard. This issue was considered because reduced procurement rates for both submarines and carriers in the post-Cold War era have resulted in excess production capacity at shipyards.

Current Capabilities and Programs

With the decommissioning of the *Forrestal* (CV-59) and the *Ranger* (CV-61) at the end of FY 1993, the Navy will have 13 aircraft carriers, of which six are conventionally-powered and seven nuclear-powered. The nuclear-powered carriers include the *Enterprise* (CVN-65) and six ships of the Nimitz class.

The planned decommissioning of the *Saratoga* (CV-60) in the near future will result in a 12-carrier force, with no dedicated training platform. Currently, two Nimitz-class carriers, CVN-74 and 75, are under construction, and are planned for delivery by the end of the decade. To maintain a constant force level as new Nimitz-class carriers are introduced, the Navy plans to decommission some additional conventional carriers that still have service life remaining.

The Bush Administration planned to retain 13 carriers as part of the Base Force, 12 of which would be

available for routine deployments, with the remaining ship serving as a dedicated training carrier. A contract for construction of the ninth Nimitz-class carrier, CVN-76, was to be awarded in FY 1995. Advance procurement funds for the nuclear propulsion plant for CVN-76 were authorized in FY 1993. The Bush FYDP also contained advance procurement funding in FY 1999 for CVN-77.

Options Examined

Nine options were examined — three variations in aircraft carrier modernization to support three different carrier force levels. Operating conventional carriers to their planned service lives or beyond, consistent with past practice, was considered in order to determine whether our conventional carriers could be kept in service longer than the Navy currently plans. As is discussed in more detail below, retaining these ships for longer periods could help to limit a potential procurement "bow wave" beyond the turn of the century at higher force levels.

The three modernization options evaluated were:

Option 1 would retain the current modernization program. It would procure CVN-76 in FY 1995 and provide advance procurement funds for CVN-77 in FY 1999, at a total acquisition cost of about \$5 billion. Overhaul of the *Nimitz* (CVN-68) would also be completed, as scheduled, in FY 1998.

Option 2 would defer CVN-76 construction beyond the FYDP period, to FY 2000. It would extend the operational life of some existing carriers to their estimated service life or slightly beyond. Advance procurement funding for future CVNs would be deferred beyond FY 1999. The *Nimitz* overhaul would be completed on schedule.

Option 3 would procure CVN-76 in FY 1995, provide advance procurement funding for CVN-77 in FY 1999, but retire the *Nimitz* in FY 1998 in lieu of overhauling it.

Initially, a fourth modernization option was also considered. It would have retained the *America* (CV-66) beyond its planned decommissioning in FY 1996 and operated the *John F. Kennedy* (CV-67) for as much as eight years beyond that ship's current estimated service life. These steps would have been taken to compensate for delaying the construction of CVN-76. This modernization strategy was rejected because the technical difficulties involved would make a service life extension program (SLEP) for the *America* prohibitively expensive and further extending the *Kennedy's* service life would require an additional, unplanned and costly overhaul. Another factor in

rejecting this option was the training and maintenance efficiency to be gained by transitioning to an all-nuclear-powered carrier force.

Three different force levels were considered in the evaluation of modernization options. The force alternatives included 10, 11, and 12 carriers, respectively. Variations in overall force levels were an important factor in assessing modernization costs and determining the industrial base implications of alternative modernization strategies.

Evaluation of Options

Five factors were weighed in evaluating each modernization option: (1) effectiveness in achieving warfighting and overseas presence requirements; (2) effects on the affordability of future carriers (i.e., the

Carrier Force Levels, Warfighting Risk, and Overseas Presence

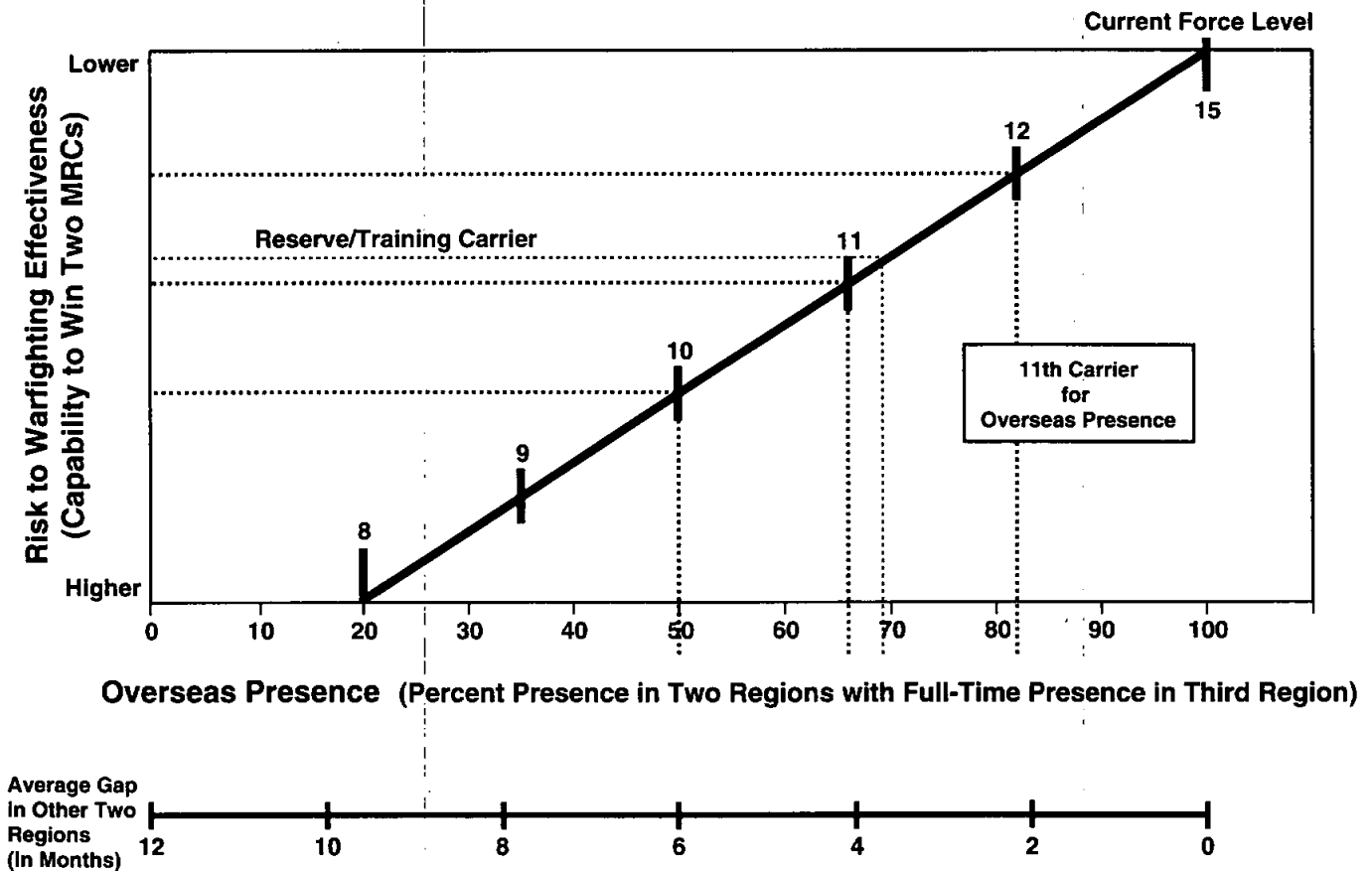


Figure 10

procurement bow wave); (3) the number of useful service years forgone by decommissioning conventional carriers early to maintain force levels constant as new nuclear carriers are delivered; (4) costs, including acquisition and nuclear refueling expenditures in the FYDP years and beyond; and (5) impact on the aircraft carrier industrial base.

Warfighting Effectiveness. First, the relationship of carrier force levels to warfighting capability in regional contingencies was reviewed. Figure 10 illustrates the increased risk to the successful accomplishment of warfighting tasks as carrier force levels are reduced. However, the analysis confirmed that a force of 10 carriers would be adequate to fight two nearly simultaneous MRCs. That assessment was based on many factors, from potential sortie generation capability and arrival periods on station to the independence of carrier-based aviation and its criticality if land-based air elements are delayed in arriving in the theater.

Overseas Presence Effectiveness. With regard to overseas presence, the analysis compared recent experience, with a total force of 14 to 15 carriers, to the peacetime overseas presence implications of a force with 10, 11, or 12 carriers.

As shown in Figure 10, a 15-carrier force could provide virtually full-time presence in three key regions where presence operations are important — the Mediterranean Sea, the western Pacific, and the Indian Ocean/Persian Gulf. A 12-carrier force could maintain a full-time presence in one region, with a minimum of two-month “gaps” in coverage in the other two. If the force were reduced to 11 or 10 carriers, the gap in regional coverage would increase. At a 10-carrier level, the United States could maintain a continuous presence in one region, but gaps in the other two would be as long as six months.

One way of reducing the effect on overseas presence of moving to a smaller carrier force would be to implement a “tether” policy for carriers. Under such a policy, carriers could operate within large areas yet be available to steam to specific staging areas within several days.

Along with implementing a tether policy, other ways of dealing with presence gaps were examined — for example, using ships other than carriers to provide overseas presence or homeporting additional carriers overseas, as is currently done with the *Independence* (CV-62) in Japan. Amphibious ready groups also could substitute for carrier battle groups in some, but not all, peacetime presence missions. Additional overseas carrier homeporting remains another potential option, but significant front-end costs, time, and diplomatic effort would be required to implement this concept successfully.

The interaction between aircraft carrier force levels and naval air wing requirements also was examined, in order to determine the most prudent and effective way to reduce the number of active and reserve air wings as carrier force levels decline. Because at least one aircraft carrier is usually in overhaul and thus not readily deployable, the Navy maintains one fewer air wing than it has carriers. Currently, the Navy has 11 active air wings and two reserve wings.

Also studied was a concept developed by the Navy calling for retention of a dedicated reserve/training carrier. This platform would be manned by a mostly active-duty crew and would be used both by Navy and Marine active and reserve pilots and crews during their initial and refresher carrier training. The carrier could deploy forward for limited periods either with an integrated active/reserve wing or with an active wing whose carrier was in long-term maintenance. This innovative new concept could improve overall reserve readiness, help fill gaps in overseas naval presence, and provide a rapidly deployable carrier for use in crises or conflicts.

Affordability. Deferring construction of CVN-76 to FY 2000 could result in an affordability problem — a procurement bow wave — for carriers constructed in succeeding years. For example, at a 12-carrier force level, slipping CVN-76 construction to FY 2000 would require that four new nuclear carriers be funded during FY 2000-08 if conventional carriers were to be replaced as they reached the end of their service lives. The option of retiring *Nimitz* early in order to save funds over the FYDP period was eliminated at force

levels of 11 or 12 carriers, because it, too, would have worsened the procurement bow-wave problem associated with carrier construction beyond FY 2000.

Carrier Useful Life Forgone. Conventional carriers are built to last approximately 30 years. Through the Service Life Extension Program, the useful life of these ships can be extended another 15 years. Because additional nuclear carriers are already funded and under construction, one of the implications of moving to a smaller force level is that conventional carriers would have to be retired several years prior to the end of their service lives in order to make way for the new carriers. The Bottom-Up Review compared the useful service life forgone of three conventional carriers — *Kitty Hawk* (CV-63), *Constellation* (CV-64), and *Kennedy* (CV-67) — for each of the force level and modernization options considered. Under all three force levels, building CVN-76 in FY 1995 would mean forgoing some useful life of these existing carriers.

Cost Analysis. Delaying funding for CVN-76 to FY 2000 (and deferring advance procurement funding for CVN-77) would save approximately \$5 billion in aircraft carrier acquisition costs during the FYDP period. However, the delay would add about \$2.1 billion to the total cost of CVN-76's construction, including the cost of reconstituting the shipbuilder's production facilities, retraining the work force, requalifying vendors, overhead escalation, and direct construction costs. The annual cost to procure, operate, and maintain a 10-carrier force, averaged out over 35 years, is approximately \$3.6 billion. An 11-carrier force costs about 10 percent more, or \$4 billion. A 12-carrier force costs about \$4.2 billion to \$4.3 billion.

Industrial Base Assessment. Also assessed was the aircraft carrier industrial base, focusing on both the shipbuilder and the firms that provide the nuclear reactor and other key nonnuclear components for the ships. Results of the submarine industrial base study, completed as part of the attack submarine portion of the



The aircraft carrier Abraham Lincoln and its battle group.

Bottom-Up Review, were considered because the studies focused on the same shipbuilder and suppliers (or vendors) that manufacture nuclear propulsion systems.

It was concluded that delaying CVN-76 construction until FY 2000 would be a high risk for the shipbuilder. This is because existing contracts will be completed in the mid-1990s and a lack of subsequent orders would threaten the shipbuilder's viability by 1997 without additional work. This risk could be mitigated if certain actions were taken ahead of time. One option would be to do the necessary pre-shutdown planning to minimize the effort and cost that would be entailed in restarting carrier production — a "smart shutdown" of certain carrier construction capabilities. Another option would avoid a shutdown altogether by rescheduling delivery of carriers under contract, overhauls, and other work in order to help keep the facility open and functioning and to maintain essential construction capabilities.

Delaying CVN-76 construction would have less impact on the nuclear vendors, assuming that work proceeds in FY 1996 on components for a new nuclear attack submarine. The analysis indicated, however, that suppliers of nonnuclear and carrier-specific equipment could be affected by a delay in CVN-76 construction.

Consolidating Nuclear Aircraft Carrier and Submarine Construction

Currently, Newport News Shipbuilding Company, in Newport News, Virginia, builds both nuclear aircraft carriers and nuclear attack submarines. General Dynamics' Electric Boat Division in Groton, Connecticut, builds nuclear-powered ballistic missile and attack submarines. Because Newport News is technically capable of building nuclear carriers and submarines, the implications of consolidating construction of these ships at that facility were assessed.

Consolidating carrier and submarine construction at Newport News would save about \$1.8 billion during

the FYDP period. However, much of these savings are derived from not funding SSN-23, the third Seawolf submarine, which would provide a "bridge" in production to keep the Groton, Connecticut, shipyard viable and preserve the industrial base needed to produce a new attack submarine. Newport News would not need such a "bridge" submarine production contract, even if CVN-76 were delayed, if all future carrier and other submarine construction were consolidated there. This issue is discussed in more detail in the Attack Submarine section of this report.

The Decision

Construction of CVN-76. We have decided to proceed with construction of CVN-76 beginning in FY 1995. This decision preserves some flexibility on the ultimate size of the carrier force, protects the carrier industrial base, avoids the cost increase associated with delaying CVN-76's construction, and avoids a major carrier procurement bow wave beyond FY 1999.

Advance Procurement for CVN-77. We will defer long-lead funding for CVN-77 until after FY 1999, pending completion of a study evaluating alternative aircraft carrier concepts for the 21st century. This latter study will examine a full range of sea-based platforms to project air power and meet our military needs in the period 2020 and beyond. Platforms to be assessed will include Nimitz-sized carriers, both nuclear and conventionally-powered; smaller-sized carriers; larger-sized carriers; and "floating islands."

Consolidating Nuclear Aircraft Carrier and Submarine Construction. Because we remain concerned about the resulting loss of competition as well as other long-term defense industrial base and national security implications that would result from having only one provider for two key classes of naval vessels, we will not consolidate all carrier and submarine construction. However, we will continue to monitor this issue closely while examining other ways to balance industrial base considerations with reduced shipbuilding requirements.

Aircraft Carrier Force Structure and the Reserve Carrier. In order to reduce our overall force structure while still meeting our warfighting and overseas presence needs, we will maintain a naval force structure organized around 11 active aircraft carriers, 10 Navy active air wings, and one composite

Navy-Marine Corps reserve air wing. We also plan to establish a reserve/training carrier to provide Navy and Marine active and reserve pilots their initial and refresher carrier training, and for occasional forward operations to cover overseas presence requirements.

SECTION V: MODERNIZATION

ATTACK SUBMARINES

Nuclear-powered attack submarines are a valuable and flexible national asset — combining the elements of stealth, endurance, agility, and firepower on a single, multimission-capable platform. Attack submarines' stealth, combined with their advanced sensors and weaponry, means they can detect and attack adversaries or conduct land attacks with cruise missiles without first revealing their presence. Stealth also means covertness — attack submarines can routinely collect intelligence on enemy forces and movements without revealing that U.S. forces are present. Nuclear propulsion provides submarines with virtually unlimited endurance and the ability to operate at very high speeds for long periods of time. Finally, the diverse firepower of attack submarines gives them the ability to use not only traditional submarine weapons, such as torpedoes and mines, but also antiship and land-attack cruise missiles.

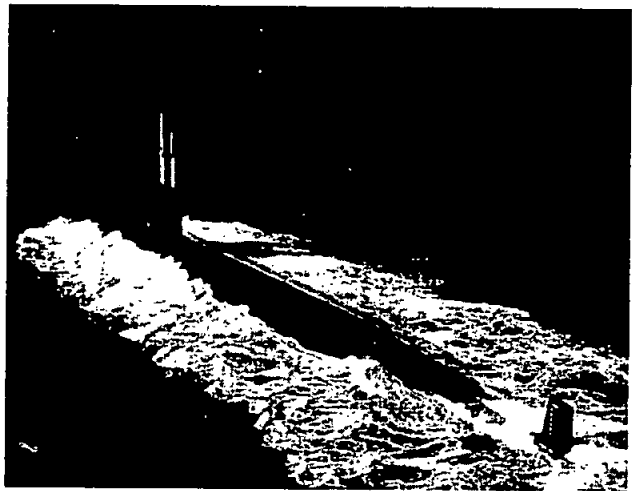
Attack submarine missions include regional sea denial, task force support, precision strikes, forward presence, surveillance, and special operations. Whether serving as key elements of joint task forces or naval battle groups, or deployed as independent units, attack submarines play an important role in U.S. defense operations.

Current Attack Submarine Force Levels and Programs

Today, the Navy has nearly 90 nuclear-powered attack submarines. These include two 594-class submarines, 31 Sturgeon-class (SSN-637) submarines, 39 Los Angeles-class (SSN-688) submarines, and 14 improved Los Angeles-class (SSN-688I) submarines. All of the 594- and 637-class boats will be decommissioned by FY 1999, as the Navy trims its force to approximately 55 attack submarines.

Currently, both Newport News Shipyard in Newport News, Virginia, and Electric Boat Shipyard in Groton, Connecticut, build nuclear-powered attack submarines. Nine improved Los Angeles-class sub-

marines are under construction, three at Electric Boat Shipyard and six at Newport News. The Navy is also building two new Seawolf-class (SSN-21) attack submarines at General Dynamics' Electric Boat Shipyard. These two subs will be completed in 1996 and 1997, respectively.



The USS Alexandria, an improved version of the Los Angeles-class (SNN-688) attack submarine.

The Seawolf, originally slated as the replacement for Los Angeles-class submarines, was designed to counter increasingly more capable Soviet submarines. With the demise of the Soviet Union and the reduced threat of global war, Seawolf production has been sharply curtailed.

At the same time, the Navy has initiated development of a New Attack Submarine (NAS) — designed to be a more cost-effective replacement for the Los Angeles class. Under current plans, acquisition funding for the first NAS would be provided in the FY 1998 budget, with construction commencing in FY 1999.

The Threat

During the Cold War, attack submarines were critical to our ability to counter the Soviet navy, primarily the threat posed by Soviet attack submarines to our

surface combatants and merchant ships, which were vital to our ability to reinforce Europe in the event of a NATO-Warsaw Pact conflict. Our attack submarine force was also our principal means of holding Soviet ballistic missile submarines at risk.

Since the end of the Cold War and the dissolution of the Soviet Union, the restructured Russian submarine force has dramatically reduced its operations at sea. However, Russia continues to construct and deploy modern, high-quality attack submarines with capabilities that approach, and in some cases exceed, our own. Russia has also begun exporting some of its modern submarines abroad, including most recently selling three Kilo-class diesel-powered submarines to Iran.

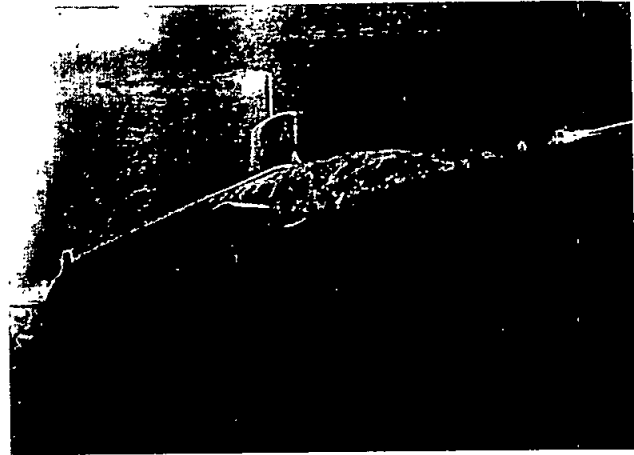
The Problem

The Bottom-Up Review addressed several issues with respect to the future size and shape of the U.S. attack submarine force.

First was the question of how many attack submarines are needed in the post-Cold War era. Ninety attack submarines are more than we need to fulfill the warfighting and overseas presence requirements of our new defense strategy. During the Bottom-Up Review, future requirements for both these missions were analyzed.

Second was the need to devise a cost-effective approach to modernizing the force as the overall number of attack submarines declines.

The third issue, linked to the first two, was the need to preserve our long-term ability to build attack submarines. This problem arises from the fact that the reduced requirement for new submarines as the force is drawn down has created a potential "gap" in new submarine construction that threatens the viability of the submarine production base. There will be a seven-year interval between the time the second Seawolf submarine was authorized (in 1991) and the start of construction of the first NAS, slated for 1998. Ongoing production to fill previous orders for SSN-688,



An artist's concept of the nuclear-powered attack submarine Seawolf (SSN-21)

SSN-21, and Trident submarines will be completed by 1997. When these submarines are completed, the Groton, Connecticut, shipyard will be without any additional submarine production work.

Force Level Options Examined

The elimination of the global threat formerly represented by the Soviet navy has created an opportunity to reduce the U.S. attack submarine force while reorienting it to reflect the new defense strategy and projected forward presence requirements.

Three different force levels were considered in the Bottom-Up Review. The options took into account the requirements of regional conflicts and presence operations, manpower and training needs, the present capabilities of U.S. attack submarines against foreign submarines, overhaul and refueling schedules, force age, and the attack submarine retirement profile. Detailed analyses of the options were performed by the Joint Staff with input from the Navy and OSD.

- **Option 1** would retain a force of 55 attack submarines. The analysis indicated that a force of this size could meet all wartime requirements for regional conflicts, as well as fulfill peacetime needs.
- **Option 2** would reduce the number of attack submarines to 45. This force also was found to be

- **Option 2** would reduce the number of attack submarines to 45. This force also was found to be capable of fulfilling warfighting requirements, but it imposed a greater degree of risk to peacetime missions than the larger Option 1 force.
- **Option 3** would reduce the attack submarine force by the greatest margin — to a level of 30 submarines. The analysis concluded that a force of this size would be unable to meet either warfighting or peacetime operational requirements.

Industrial Base Considerations

Several options were considered as a means of avoiding the potential consequences of a gap in submarine construction. Two alternatives emerged as the leading candidates. The first took steps to effect a “smart” shutdown of nuclear submarine construction at Newport News, with an eye to preserving the capability to resume production in the future, when circumstances warrant. A “smart shutdown” approach makes more sense at Newport News, since much of its skilled work force would continue construction of nuclear aircraft carriers. Thus, in effect, this option would end submarine production at the Groton, Connecticut, shipyard. It would require approximately \$625 million in shutdown/reconstitution-related costs.

The second option provided for construction of a “bridge” submarine to avoid the adverse consequences of attempting to shut down a nuclear-certified shipyard and then having to reopen it at a later date. This option was more expensive than the first, costing about \$1.8 billion, but was judged to be the better industrial practice and had the added benefit of providing the nation with a third state-of-the-art Seawolf attack sub-

marine at a cost of only \$1.2 billion more than the first option, which provided no third Seawolf.²

The Decision

The Bottom-Up Review concluded that, in response to the changing threat environment, the Navy should reorient its submarine force to focus on regional conflicts and presence operations, keeping in mind the increasing capabilities of foreign, primarily Russian, submarines. Specifically, the review determined that:

- A force of 45 to 55 attack submarines is needed to meet the requirements of our defense strategy, including both regional conflicts and peacetime presence operations.
- Production of a third Seawolf attack submarine in FY 1995 or FY 1996, which will be directed to the Groton, Connecticut, shipyard, would “bridge” the projected gap in submarine production.
- The Navy should develop and build a new attack submarine as a more cost-effective follow-on to the Seawolf class, with construction beginning in FY 1998 or FY 1999 at the Groton, Connecticut, shipyard.

These last two decisions will maintain two nuclear-capable shipyards, thereby mitigating the risk to the industrial base.

² The \$1.8 billion includes \$1.5 billion in the FYDP period for the bridge submarine, as well as \$300 million for smart shutdown/reconstitution-related costs. It does not include some prior appropriations or sunk costs for SSN-23, which brings the total cost to \$2.4 billion.

SECTION V: MODERNIZATION

SPACE LAUNCH

Satellites are an essential element of America's military capability, as well as its economic security. These systems provide vital support to our forces in such areas as intelligence-gathering, surveillance, missile warning, communications, weather monitoring, and navigation. A robust space launch capability is integral to our ability to operate in space because it provides the means to place satellites into orbit.

Requirements for space launch are of two types: (1) performance — the ability to deliver a satellite (payload) reliably to a specific orbit, and (2) operational flexibility — the capability to perform rapid and adaptive payload integration, servicing, substitution, and launch. Today's launch systems meet the performance objective, albeit with less than desired reliability, but fall short of the operational flexibility goal.

The Bottom-Up Review evaluated the current and projected status of DoD's space launch capabilities, along with various options for future investments in launch vehicles and infrastructure. The review included an examination of U.S. military, civil, and commercial space launch needs; the international competitiveness of the U.S. commercial space launch industry; and the effect of various modernization options on the industrial base.

The Problem

As indicated in Figure 11, DoD maintains a fleet of expendable launch vehicles (ELVs) and also uses the space shuttle to place military satellites in orbit. The National Aeronautics and Space Administration (NASA) uses the shuttle as its primary launch vehicle, but also employs both DoD ELVs and commercial variants of these vehicles.

As a result of a 1970s decision to fly all DoD spacecraft on the NASA shuttle, DoD investments in space launch infrastructure and vehicle improvements

virtually halted. Expenditures in this area remained relatively dormant until 1986, when the Challenger accident revealed the consequences of such an "all eggs in one basket" approach. Since then, DoD has gradually lessened its reliance on the shuttle to launch defense payloads, while increasing its investments in maintaining and improving the outdated ELV fleet and aging launch infrastructure.

Currently, the main types of launch systems used by DoD are the Delta II (manufactured by McDonnell Douglas), the Atlas I and II (produced by General Dynamics), and the Titan II and IV (made by Martin Marietta). Over the next several decades, launch rates in support of military satellite requirements are expected to be fairly stable at 15-20 per year, spread among the existing Delta, Atlas, and Titan boosters. While we are currently able to place all military satellites into their required orbits with this fleet, maintaining this capability over the long term will require significant investments in both the existing vehicles and the associated launch infrastructure.

Today, U.S. military space launch capabilities are characterized by high cost and serious operational limitations as a result of (1) the need to sustain three separate launch teams (for the three booster types) and associated support equipment, (2) the aging and obsolescence of major ELV components, and (3) continued dependence on outdated launch vehicle production lines and manpower-intensive launch processes. As a result, the performance and flexibility of launch operations is inadequate and system responsiveness in crises or emergencies is limited. For example, the current launch systems do not provide any overlap in performance — individual satellites are tied to specific space launch systems. Thus, Global Positioning System (GPS) satellites must be launched on Delta boosters, Defense Satellite Communications System (DSCS) satellites on Atlas boosters, and Defense Support Program (DSP) satellites on Titan boosters.

Primary U.S. Space Launch Vehicles

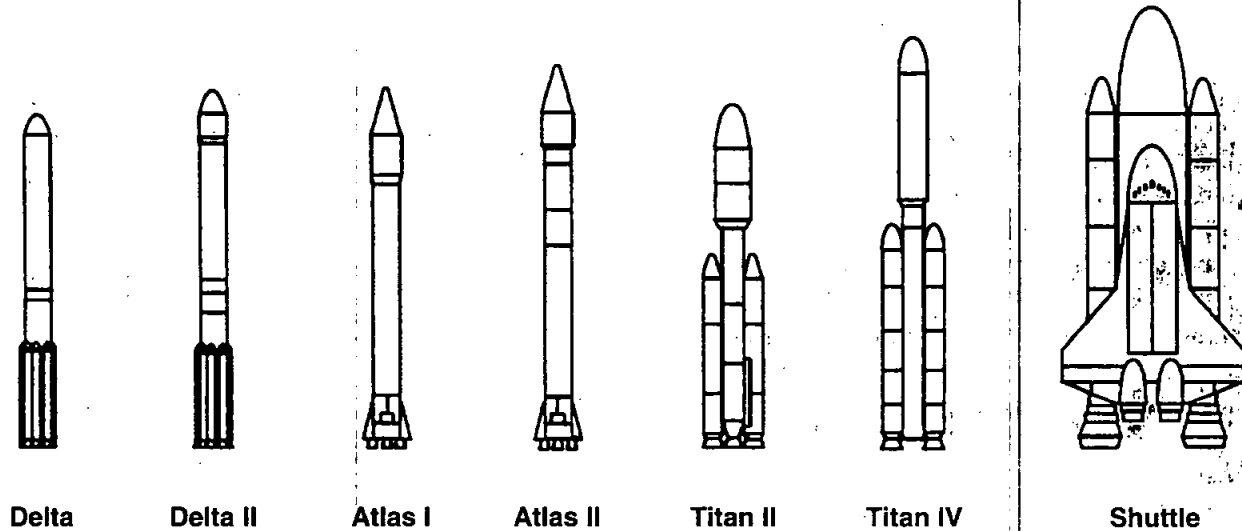


Figure 11

Another problem is the current production over-capacity in the American space launch industry. Because booster production is spread among three manufacturers, the industry is operating at less than 50 percent capacity, raising the unit cost of each booster. To date, there has been little effort to consolidate or reduce capacity, based on current and projected space-launch requirements. As DoD's demand for satellites continues to shrink, the ability to sustain three separate launch suppliers over the long term is in doubt.

Finally, there is the issue of foreign competitors, which have begun to offer reliable and low-cost space launch systems. The U.S. civil and commercial sectors average about 25-30 satellite launches per year — enough, along with the DoD launches, to sustain the three U.S. manufacturers. However, about half of the commercial satellites and some of NASA's satellites now use foreign launch systems. There is also a growing market for commercial space launches outside the United States. If U.S. space launch systems cannot compete better in both the domestic and international markets, the U.S. share of these markets will continue to decline, DoD will account for a larger share of the demand for U.S. launch systems, and consequently, DoD's own space launch costs will increase.

If this should occur, DoD's current policy of "launch only on U.S. boosters" would become increasingly expensive.

Options Examined

To address these concerns, the Bottom-Up Review examined three different options for modernizing DoD's space launch capability: (1) extending the life of the current launch vehicle fleet to the year 2030; (2) developing a new family of expendable space launch vehicles to replace the current fleet starting in 2004; and (3) pursuing a technology-focused effort to develop a reusable launch vehicle that would effectively "leapfrog" the next generation of ELVs. In addition, more austere versions of Options 1 and 2 were developed that funded only "must do" improvements for the space launch and range infrastructure.

Option 1: Life-Extension Program for Current Systems. This option retains the three existing major launch systems (Delta, Atlas, and Titan IV) through the year 2030. It includes both robust (Option 1) and austere (Option 1A) variants for upgrading the space launch and range infrastructure, completing



Delta II launch from Cape Canaveral.

necessary maintenance and flexibility improvements, and funding cost-effective launch vehicle flexibility upgrades.

Option 2: New Launch System Development.

This option replaces the current ELV fleet with a new family of "space lifter" launch vehicles. It also provides for current vehicle and infrastructure upgrades prior to and during a period of transition, from 2004 through 2013. Robust (Option 2) and austere (Option 2A) upgrade options are included.

Option 3: "Leapfrog" Technology Launch Systems. This option funds the development of an advanced reusable launch system and provides for current vehicle and infrastructure upgrades prior to and during a transition period that starts in 2010, leading up to the introduction of the new launch system.

Evaluation of Options

Option 1 makes investments in launch vehicles and infrastructure. It meets all launch-vehicle performance needs. All upgrades are considered to be cost-effective, and are identified in four priority categories. The robust version of this option includes upgrades in all categories; Option 1A, the austere version, includes only the most necessary enhancements. However, even the more ambitious upgrades to current launch systems fail to satisfy the flexibility requirement or meet improved reliability goals. Consequently, this option offers little potential for reducing the high operating costs of the current systems, since we would still be maintaining three independent launch teams, with the associated inefficiencies, due to overcapacity in the industrial base. This option would have little impact on anticipated U.S. payload development efforts. It appears to be the least expensive option, over the FYDP period, of those examined.

Option 1 also offers little opportunity for cooperative activities with NASA; it offers minimal assistance to the U.S. launch vehicle industry to support commercial competitiveness; and it results in U.S. systems that could be more costly and less reliable than certain foreign alternatives for the foreseeable future.

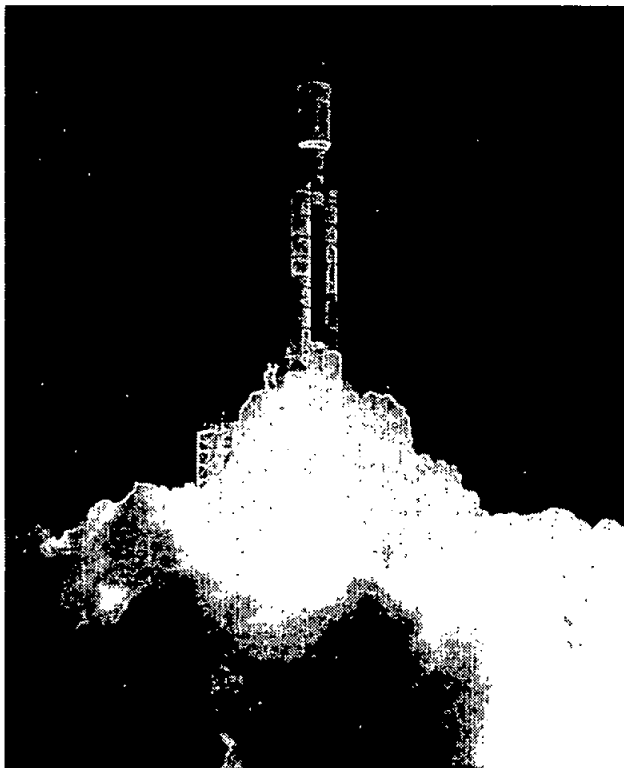
Option 2 also satisfies launch needs for current and projected U.S. military payloads. The design for this new generation of systems offers the potential for major improvements in both reliability and operational responsiveness, as well as significant reductions in operating costs. Significant investments in research and development would be required both during and beyond the FYDP years. The amount of these investments would depend on the particular design selected; since the new space lifter is still in the concept development phase, it is difficult to determine with accuracy its projected cost.

Because of the time needed to develop a new space lifter and integrate it with the variety of satellites it would carry, there would be a relatively long transition period, from 2004 to 2013, during which space

payloads would continue to be launched by current systems. Thus, in addition to the investment in the new space lifter, this option requires the same launch vehicle and infrastructure upgrades to existing systems as Option 1. An austere option, Option 2A, includes only the most necessary upgrades.

This option would be particularly effective in re-ordering the industrial base and reducing significantly the production and operating inefficiencies of current systems. There would also be greater opportunity for technical and fiscal cooperation with NASA in the development, production, and operations phases. Moreover, this option would improve the international competitiveness of the U.S. commercial launch industry.

Option 2 also offers the opportunity to expand cooperative efforts with Russia on commercial uses of



Titan IV launch from Cape Canaveral, Florida, carrying DoD satellite into orbit.

space by introducing Russian technology into vehicle development and launch processing. The use of Russian technology, especially advanced liquid rocket engines, could also reduce the development time and cost of a new launch system. However, a principal policy concern is whether the United States should consider relying on a non-U.S. system to launch military satellites.

Although difficult to measure, this option offers the potential for reduced long-term costs if savings from higher reliability (less frequent failures and the associated cost of stand-down) as well as benefits (lower unit and operations costs) for the civil and commercial launch sectors are taken into account. Nevertheless, preliminary analyses indicate that it could be several decades before this "payback" in savings would be realized.

Option 3 was the most difficult to quantify, because of the large uncertainties inherent in the cost estimates, the high technical risk of some of the launch systems, and the breadth of the technologies that require significant investments within and beyond the FYDP period. During the analysis of this option, some of the new approaches were found to entail less technical risk and thus could be considered as variants within Option 2. Because Option 2 would have a concept development phase that considered all possible alternatives – including expendable, partially reusable, and fully reusable launch vehicles – it was determined that the concept phase would result in a better understanding of the technical and cost risks associated with those concepts.

Option 3 provides the long-term potential for the lowest operating and maintenance costs, primarily because of reusability. It would also offer the greatest change to the industrial base, because of the significant differences associated with producing a small number of advanced launch vehicles (4-6) and the operations of a reusable system. There would also be a significant opportunity for cooperation with NASA in developing the technologies, since most would be applicable to both manned and unmanned systems. Nevertheless,

the near- and mid-term costs of developing and producing these advanced launchers would be very high.

Because of the need to structure a technology readiness program that would last through the end of the decade, and given the fact that development of such a vehicle would extend well into the first decade of the 21st century, we would need to maintain the current fleet much longer (until the year 2015). This would result in significant investment costs at a time when development expenditures for the new system would be at their highest. For these reasons and because there are concepts that have less technical risk, this option was not considered to be viable, especially given current and projected budget constraints.

The Decision

After reviewing the alternatives, we selected the austere life-extension option (1A). This option adequately fulfills DoD's projected space launch needs at the lowest cost over the next decade. It includes the improvements needed in our space launch infrastructure. It also retains the option for incremental improvements to the current launch fleet to support future needs. Although a new launcher development effort would have permitted us to attain our desired goals for operational flexibility and reliability, and would have contributed toward improved competitiveness of the U.S. commercial space launch industry, those benefits did not outweigh the near-term costs of such an approach.

SECTION V: MODERNIZATION

MILITARY SATELLITE COMMUNICATIONS

There are four segments to the military satellite communications (MILSATCOM) architecture. First, ultrahigh frequency (UHF) satellites are the workhorses for tactical ground, sea, and air forces. Second, the superhigh frequency (SHF) Defense Satellite Communications System (DSCS), first deployed in the 1970s, supports long-distance communications requirements of military forces that cannot be met by ground-based communications systems. The DSCS system satisfies the majority of DoD's medium- and high-data-rate communications requirements. Milstar will soon be integrated as the third segment of the MILSATCOM architecture. It will provide a worldwide, secure, jam-resistant communications capability to U.S. civilian and military leaders for command and control of military forces. The fourth segment consists of commercial communications satellites, which are used to support DoD's MILSATCOM capabilities where jamming protection is not required.

The Bottom-Up Review evaluated MILSATCOM program alternatives in light of the projected threat, operational requirements, cost and effectiveness trade-offs, and affordability. The primary emphasis was on providing low-data-rate (LDR) and medium-data-rate (MDR) communication capabilities for U.S. tactical forces employed in one or more major regional conflicts, although the review also addressed requirements for strategic forces.

While all current MILSATCOM programs were reviewed, the focus was on identifying and evaluating lower-cost alternatives to Milstar. Milstar is a joint-service program to develop and acquire satellites, mission control elements, and new or modified terminals to support extremely high frequency (EHF) communications. The Milstar system would directly support the National Command Authorities (NCA) and the tactical and strategic forces of the unified and specified commanders-in-chief (CINCs) during all levels of conflict.

The Problem

The original Milstar program, initiated in the early 1980s, was designed to provide LDR communications for strategic and tactical military forces, primarily during a nuclear conflict. The highest-priority users were expected to be strategic and nonstrategic nuclear forces, with tactical naval, ground, and air forces having a lower priority. The original design included many special features intended to allow the system to survive and operate during a nuclear conflict.

Because of the greatly reduced threat of nuclear war in the post-Cold War era, Congress directed DoD in the fall of 1990 to restructure the Milstar program (now designated Milstar II) to emphasize its utility for tactical military forces and to reduce system costs. The system's survivability and endurance features and constellation size also were reduced.

Nevertheless, during preparation of the FY 1994 defense budget, the issues of Milstar affordability and alternative satellite designs were raised again. The Bottom-Up Review thus undertook a comprehensive evaluation aimed at determining the costs and effects on military capabilities of the Milstar program and alternatives to it.

Current Program

The current Milstar program would launch the first two Milstar satellites (Milstar I, LDR-only) in FY 1994 and FY 1995, respectively, and would develop an MDR payload for the first Milstar II satellite, scheduled for launch in FY 1999. The current program also includes funding for an as-yet-undefined "polar adjunct" to Milstar and would continue preparations for a Defense Acquisition Board program review of that adjunct. A complete constellation of LDR and MDR satellites would be achieved with the launch of the

fourth Milstar II satellite. Replenishment of the four-satellite Milstar II constellation would occur between FY 2006 and FY 2009, with the exact launch dates to be determined by actual satellite longevity. Ultimately, nine Milstar II satellites would be bought through FY 2011, including a spare satellite planned for delivery in FY 2003. Total expenditures for the Milstar program during FY 1994-99 would be almost \$12 billion, including satellites and terminals.

Options Examined

As indicated in Figure 12, all alternatives to the current program would deploy advanced EHF satellites, and would therefore provide significantly more capability than we have today. All options would also launch the original two Milstar I satellites and eventually transition to Advanced EHF satellites that would be developed in the mid-to-late 1990s. The successor system would maintain as much LDR and MDR capability as possible while reducing satellite weight, which should help to reduce costs. The alternatives to the current program differ as to when the initial Advanced EHF satellite would be launched and, consequently, the MILSATCOM capabilities that would be provided in the meantime.

Option 1 (Milstar II/Advanced EHF) would retain four Milstar II satellites, with a first launch in FY 1999 (as in the current program), but it would eliminate the fifth Milstar II satellite (planned for delivery as a spare satellite in FY 2003) as well as subsequent Milstar II satellites. Full operational capability for LDR and MDR would be achieved on the same schedule as under the current program. Under this option, Advanced EHF satellites would be developed using advanced technology, to provide LDR and MDR capabilities comparable to those of Milstar II. Advanced EHF satellites would begin replenishing Milstar satellites around FY 2006.

Option 2 (MDR-Only/Advanced EHF) would cancel Milstar II and replace the four Milstar II satellites with satellites providing an MDR capability, but eliminating the LDR capability. The first MDR-only satellite would be launched in FY 2000, with a four-satellite constellation on orbit in FY 2003. This option would also develop Advanced EHF satellites with both MDR and LDR capability. The first of those satellites would be launched in about FY 2007.

Option 3 (Advanced EHF Only) would also cancel Milstar II, but it would replace that system with

MILSATCOM Launch Schedule

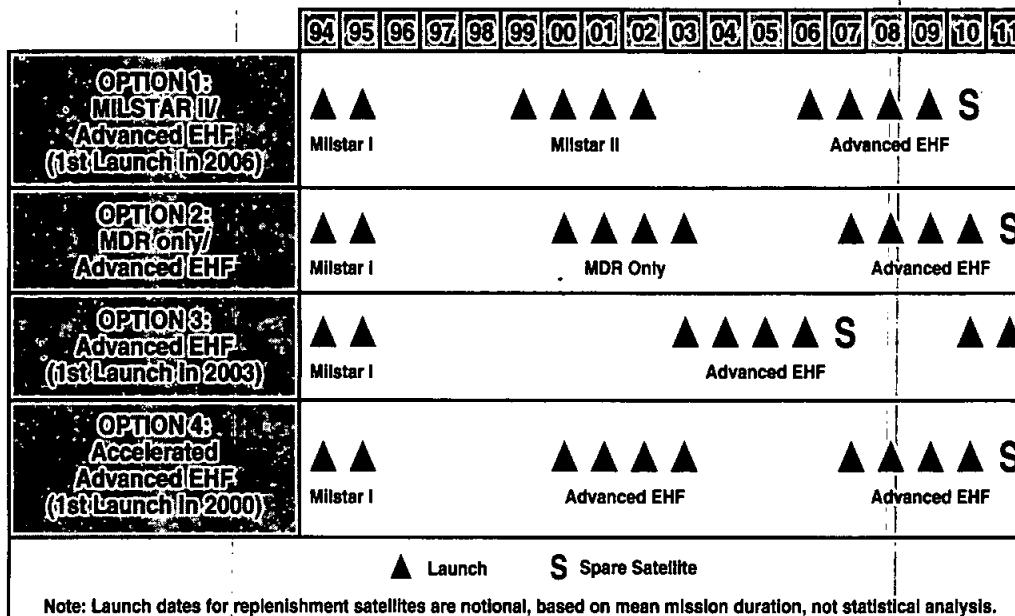


Figure 12

Advanced EHF satellites having both MDR and LDR capabilities. The first Advanced EHF satellite would be launched in FY 2003, with a four-satellite constellation in place in FY 2006.

Option 4 (Accelerated Advanced EHF) is similar to Option 3, except that it accelerates development of the Advanced EHF satellite, achieving a first launch in FY 2000 and a four-satellite constellation in FY 2003. This alternative would, if necessary, trade capability for weight on the initial satellites to maintain an FY 2000 launch date. Subsequent satellites could incorporate performance improvements, if needed.

Evaluation of Options

Two factors guided decisionmaking on Milstar alternatives. First, the military requirement for a jam-resistant advanced EHF communications system providing capability equivalent to Milstar II was reaffirmed early in the process. Second, while future national security requirements guided the evaluation of program alternatives, another important objective was to identify options that offered substantial cost savings relative to the current Milstar program.

An outside Technical Support Group was established to review the options and assess the level of risk, as well as to develop and evaluate additional Milstar alternatives. The Technical Support Group concluded that the most effective way to provide the desired communications capability in a cost-constrained environment would be with the new-design Advanced EHF satellites, deployed in geostationary orbits and providing both LDR and MDR capability.

The primary reason for considering options to the current Milstar program was to reduce system cost. Milstar II satellites would weigh approximately 10,000 pounds and, consequently, would have to be launched on Titan IV rockets — an expensive launching mode. The Technical Support Group recommended that DoD take advantage of recent technological advances to build substantially lighter satellites that could nevertheless provide performance comparable to Milstar II. The group concluded that a reasonable objective would

be to transition to a lighter, advanced EHF satellite that could be boosted into orbit by a medium-launch vehicle (MLV). This would limit costs, which have historically been related to satellite weight.

The consensus of the Technical Support Group was that an Advanced EHF satellite that could be launched from an MLV could be available by 2003. However, the four-year delay between the scheduled launch of the first Milstar II satellite and the postulated launch of the first Advanced EHF satellite was a concern. Consequently, the Technical Support Group considered what capabilities could be provided on an Advanced EHF satellite if the first launch was accelerated to 2000.

The Technical Support Group did not reach a consensus on whether such an accelerated deployment of Advanced EHF satellites was possible. It identified as a major risk the lack of maturity in the packaging for microwave and digital electronics. A first launch in 2000 would be possible, according to some of the group members, using technology already developed or currently under development. Other members of the group concluded that there would be major risks associated with the concurrent technology demonstration, satellite design, and streamlined test program inherent in Option 4.

Cost Comparison

Total space segment costs (including launch costs) in FY 1994-2011 for the alternatives considered in the review ranged from \$6.1 billion for the least costly option (Option 3) to \$13.9 billion for the current program. Cost estimates for Option 4 varied from \$7.2 billion to \$11.3 billion, depending upon assumptions about risk of payload weight growth or schedule slippage.

Option 1 has essentially the same FY 1994-99 costs as the current program because it retains the first four Milstar II satellites, although it does achieve about \$300 million in cost savings by canceling the Milstar II spare satellite. Further cost savings are achieved beyond the FYDP period by transitioning to the lower-

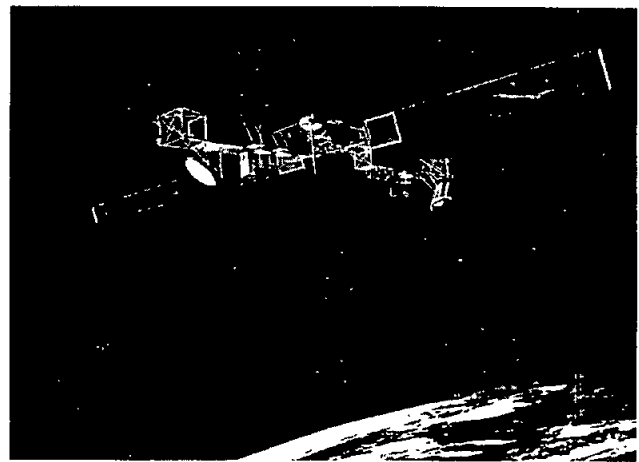
cost Advanced EHF satellite. FYDP savings of the other three options come predominantly from canceling the Milstar II program immediately and deferring MDR capability.

There are also differences in launch costs among the options, driven primarily by the differences in costs of the launch vehicles for the Milstar II satellites (Titan IV) and Advanced EHF satellites (Atlas IIAS). The Titan IV costs approximately \$285 million per launch and the Atlas IIAS about \$115 million.

Effectiveness Comparison

All of the alternatives to the current program would eventually provide sufficient LDR and MDR capability, although each has some shortfalls compared to the current program. The LDR shortfall is most severe in Option 2 because that option provides no substantial LDR capability until Advanced EHF satellites are launched beginning in 2007. Option 3, which provides for initial operations of Advanced EHF satellites in FY 2003, would delay initial MDR service by four years relative to the current program. Options 2 and 4 would delay MDR service by one year.

The Joint Staff assessed each option's ability to fulfill military requirements for EHF communications. It concluded that, while the concept of an advanced EHF follow-on to Milstar II is acceptable, the system should be designed to meet military requirements, not cost or weight limits. Options 2 and 3 were judged unacceptable because their schedules provide capabilities much later than does the current program or Option 1. The technical, cost, and schedule risks of Option 4 were considered to be too high. The Joint Staff also concluded that the LDR capability provided by Advanced EHF satellites would be reduced relative to Milstar II because these satellites would provide fewer antennas than Milstar II.



Milstar

In summary, the options differ in cost, capability, risk, and schedule. Those options that do not contain Milstar II satellites trade costs for capability and/or schedule. As cost savings increase, risk increases and deployment of EHF capability is delayed.

The options containing four Milstar IIs were determined to be most preferable because a constellation of that size would meet military requirements and provide the most operational capability at the earliest date. Option 3 was considered unacceptable because it would delay LDR and MDR capability by four years. Option 4 would provide capability sooner, but its schedule was considered high risk.

The Decision

After reviewing the alternatives, we decided to proceed with Option 1, deploying both Milstar I and the initial constellation of Milstar II satellites, then transitioning to a lower-cost, lower-weight Advanced EHF satellite that would be launched initially by FY 2006. We believe that this represents the best means of achieving a needed military communications capability in the near term while potentially reducing the long-term costs associated with sustaining this capability.

SECTION V: MODERNIZATION

V-22 OSPREY TILT-ROTOR AIRCRAFT

In 1981, the V-22 program was initiated as a joint-service effort to develop a tilt-rotor aircraft incorporating advanced avionics and composite technologies. Such a system would offer significant improvements over existing and projected helicopter capabilities. As originally envisioned, the V-22 Osprey aircraft was to be produced in various versions for use in a range of military missions. Initially led by the Army, the V-22 program was transferred to the Navy in 1982, when the Army withdrew because of concerns about the system's affordability. One of the principal intended users of the V-22 was to be the Marine Corps, which has an acute need to replace the CH-46 and CH-53 helicopters that fulfill its medium-lift requirement — that is, transporting personnel, supplies, and equipment ashore during amphibious assaults. The V-22 was intended to satisfy certain Navy, Air Force, and special operations force (SOF) needs as well.



V-22 Osprey.

In 1989, the V-22 program was terminated by the Bush Administration, and then-Secretary of Defense Cheney directed the Navy to develop an alternative aircraft. In response, the Navy established and funded a program to investigate an alternative, called the Medium Lift Replacement (MLR). However, Congress consistently voted to fund continued V-22 development and refused to provide funding for the MLR program.

In July 1992, DoD and Congress worked out a compromise that added funding to the defense budget for demonstrations of both V-22 technology and other medium-lift helicopter technology, leaving for future years the decision on which technology would best meet DoD's medium-lift needs. Over the succeeding years, development of the V-22 at a limited funding level proceeded and study of an alternative MLR helicopter was begun.

The Problem

While the Congress and the Bush Administration duelled over the merits of the V-22, the Marine Corps' need for a medium-lift replacement aircraft grew. Its inventory of CH-46s and CH-53As and Ds continued to age and decline through attrition, resulting in a fleet that cannot currently meet Marine Corps requirements. Moreover, while the compromise on V-22 worked out between the Congress and the Bush Administration kept the V-22 program alive, the Bush 1994-99 FYDP did not fund V-22 development at a level sufficient to allow the system to proceed toward production.

Status of the V-22 Program

No task force was established under the Bottom-Up Review to examine the V-22 program because the program is being reviewed under the auspices of the Defense Acquisition Board (DAB). On June 30, a committee within the DAB reported to the Under Secretary of Defense for Acquisition on the status of its V-22 review, taking into consideration applications of the V-22 for both the Marine Corps and special operations forces, and the status of the alternative MLR program.

The purpose of this review was to: (1) decide on a path for defining the right program to meet relevant requirements for the Marine Corps and SOF; (2) re-

view the status of the V-22 and MLR programs, including the technical objectives, milestones, funding, contract structure, and technical and cost risks entailed; and (3) provide guidelines to support a future decision on the requirements, structure, and funding of the two programs. The review also examined potential commercial applications of tilt-rotor technology. The range of V-22 options examined over the past several months covered various funding and procurement profiles for SOF and the Marine Corps.

In June, the DAB concluded that a focused effort should be undertaken over the next few months to define the acquisition options more precisely. There will be a series of reports and progress reviews, all coordinated by the Under Secretary of Defense for Acquisition, leading to a program decision in the fall of 1993. We expect that these efforts will provide a range of V-22 options and MLR helicopter alternatives to guide the Department in choosing the right option to fulfill SOF air transport and Marine Corps medium-lift requirements in a cost-effective and affordable manner.

SECTION VI

INITIATIVES

The new dangers and opportunities of the post-Cold War world require the United States to act proactively to protect and enhance its national security. We must seek not only to counter threats to our security as they arise, but to prevent them from occurring in the first place. We must also seize opportunities to shape the international environment in ways favorable to our interests. Toward these ends, the Department of Defense is undertaking a series of new policy initiatives, including:

- Cooperative threat reduction
- Counterproliferation
- Former Soviet Union defense/military partnership
- Global cooperative initiatives — peacekeeping and peace enforcement, humanitarian assistance, disaster/famine relief, and the promotion of democracy through military-to-military contacts.

By mitigating the dangers against which future defense dollars would otherwise have to be spent, these initiatives have the potential to save more than they cost.

Cooperative Threat Reduction

As Russia, Belarus, Ukraine, and Kazakhstan implement their respective arms reduction commitments and responses to the U.S. presidential nuclear initiatives of September 1991 and January 1992, hundreds of strategic offensive arms and thousands of nuclear warheads must be dismantled. Russia must also ensure the safety and security of its remaining nuclear arsenal and meet its commitment to completely destroy the huge chemical arsenal it inherited from the former Soviet Union.

These would be difficult tasks even without the massive economic, political, and military dislocations engendered by the dissolution of the former Soviet Union. But such dislocations have increased the risk that nuclear weapons could be subject to accidental or unauthorized use, could form the basis for the emergence of new nuclear weapons states, or even could fall into the hands of terrorist groups. The dislocations have also increased the danger that the materials and know-how needed to develop nuclear weapons could leak through porous FSU borders to other countries.

The United States simply cannot afford to ignore these risks. The Cooperative Threat Reduction initiative aims to reinvigorate and expand upon past and ongoing U.S. efforts to actively assist in the destruction of FSU weapons of mass destruction and the prevention of weapons proliferation.

Specifically, this initiative builds upon the historic "Nunn-Lugar" legislation, which authorized the Department of Defense to transfer, subject to restrictions, up to \$800 million in FY 1992-93 appropriations or working capital accounts to assist eligible FSU states to:

- Destroy nuclear, chemical, and other weapons.
- Transport, store, disable, and safeguard weapons in connection with their destruction.
- Establish verifiable safeguards against the proliferation of such weapons.
- Facilitate demilitarization of defense industries and conversion of military technologies and capabilities to civilian use.
- Expand military-to-military and defense contacts between the United States and the newly independent states.

The United States has made political commitments to provide approximately \$420 million in Nunn-Lugar assistance to Russia, at least \$175 million to Ukraine, and up to \$75 million to Belarus. To date, the Department of Defense has notified Congress of proposed obligations totaling \$488.5 million for specific Nunn-Lugar projects for which the necessary agreements are signed or awaiting signature or parliamentary ratification. If ongoing discussions with the eligible states prove successful, additional implementing agreements could be signed in the next few months that would absorb nearly all of the remaining \$311.5 million.

The Cooperative Threat Reduction initiative for the FY 1994-99 period retains key elements of the existing "Nunn-Lugar" legislation — in particular, its emphasis on the safe and secure transportation, storage, and elimination of nuclear weapons and on non-proliferation — and targets some new areas for additional assistance as well:



Workers disassembling chemical munitions.

- Destroying weapons of mass destruction in the FSU and removing all nuclear weapons from Ukraine, Belarus, and Kazakhstan, including dismantling strategic nuclear delivery vehicles to comply with the START I and II treaties and destroying chemical weapons.

- Constructing a safe, secure, and environmentally sound storage facility for fissile material from dismantled nuclear weapons in Russia.

- Preventing the proliferation of weapons of mass destruction, their components, related technology, and expertise within and beyond FSU borders, including the establishment of effective export-control systems, fissile material control and accountability systems, physical protection systems and, possibly, additional resources for the science and technology centers being established in Moscow and Kiev.

- Advancing the complex and costly effort to achieve the environmentally safe elimination of the chemical weapons arsenal in Russia.

- Other projects to keep the process of denuclearization and demilitarization on track in the FSU, including environmental restoration of former strategic offensive arms bases, defense conversion, retraining and housing of former military officers, and expanded military and defense contacts.

To implement this initiative, a separate Cooperative Threat Reduction line-item account is being proposed with an additional \$400 million in DoD funding for FY 1994, to remain available until expended.

The United States cannot and should not bear the entire threat reduction bill for these four newly independent states, and we will continue to insist that they do their part. We are also pressing key European allies and Japan to increase their helpful, but relatively modest, assistance to the FSU in this area.

This initiative will require a significant effort by the Administration, Congress, and ultimately the American people. But it is essential to U.S. and international security in the post-Cold War era. This is not "foreign assistance" as traditionally defined. Rather, it is a unique and relatively small investment in U.S. national

security from which we stand to reap great benefits, including savings in defense programs that might otherwise be necessary to deter or defend against FSU weapons of mass destruction in the future.

Counterproliferation

More than 25 nations either have or are attempting to acquire weapons of mass destruction — nuclear, biological, or chemical. In most areas where U.S. forces could potentially be engaged, our likely adversaries already possess chemical and biological weapons. Most of these states are striving to acquire nuclear arsenals as well.

Several new realities are contributing to the spread of WMD and related technology. First, alternative suppliers of WMD technologies and delivery systems are emerging, with countries such as North Korea offering to sell technologies and missiles with little regard for the ambitions of recipient states. In addition, the indigenous capabilities of countries of concern are improving. There is also the new danger of nuclear, biological, and chemical weapons, materials, equipment, and knowledge leaking from the former Soviet Union. Further, the challenges associated with controlling dual-use technologies have grown.

In the hands of a hostile regional power, weapons of mass destruction could threaten not only U.S. lives but also the viability of our regional power projection strategy. For example, if a state opposed to U.S. interests were to acquire nuclear weapons, it could use them in a conflict or crisis in any number of ways, from threatening to attack a neighboring state in an effort to dissuade it from requesting U.S. assistance to threatening American and allied forces or cities in an effort to deter U.S. intervention altogether. Furthermore, the unpredictable nature of some Third World regimes, coupled with the fact that potential adversaries may have more at stake in a regional conflict than the United States, means that the United States' ability to deter such actions may at best be uncertain.

In these circumstances, our nation not only must seek to prevent the spread of weapons of mass destruction, but it must be prepared to respond to the military

threat posed by these weapons should nonproliferation efforts fail. We are not resigned to the failure of nonproliferation regimes; rather, confronted with the possibility of even limited failure, we must ensure that our forces have the capabilities they would need to confront an opponent armed with weapons of mass destruction in a future crisis or conflict. The counterproliferation initiative is designed to develop a coherent strategy to prevent additional countries from acquiring WMD and, should such efforts fail, to deter these weapons' use against the United States and its allies, to defend against them if they are used, and to ensure that U.S. armed forces can successfully carry out operations in a conflict involving the use of nuclear, chemical, or biological weapons.

Toward that end, we are assessing the military capabilities needed and correcting any deficiencies that may exist. Our assessment will cover the following broad areas:

- Intelligence
- Battlefield detection
- Passive defenses
- Active defenses
- Counterforce capabilities
- Inspection and verification support
- Export control support

DoD's counterproliferation approach, which is designed to complement and strengthen the traditional nonproliferation efforts of other U.S. government agencies, will be implemented in three parts. First, we will strive to foster an international environment that discourages the proliferation of weapons of mass destruction and to strengthen export controls and related arms control arrangements. Second, in our forces and programs, we will determine the specific capabilities needed to counter proliferation, identify existing DoD efforts that contribute to these capabilities, specify remaining deficiencies vis-a-vis threats from weapons of mass destruction, and devise programmatic options to address those deficiencies. Finally, in our tactics and contingency plans, we will seek to improve our ability to deter the use of nuclear, chemical, and biological weapons, to develop doctrine and tactics for dealing with them, and to incorporate WMD threats into our planning.

This initiative will be a multifaceted, multiyear effort involving numerous and diverse components of DoD. Not all of these activities are captured in the \$40.5 million requested for counterproliferation in FY 1994.

Countering proliferation is central to addressing both nuclear and regional dangers in the post-Cold War world. Strengthening the U.S. military's capabilities for meeting the threat of the proliferation of weapons of mass destruction is one of the Department's most important responsibilities in the new security environment.

FSU Defense/Military Partnership

The post-Cold War trend toward democracy and liberal reform only bolsters the security of the United States. Not only are Western values ascendant, but prospects for the peaceful resolution of disputes improve as democracy spreads, and the potential for global prosperity increases as more countries adopt market reforms.

But these trends are not irreversible. In most former communist countries, democratic institutions are not yet firmly in place, and market reforms have yet to produce tangible improvements in the standard of living. The reversal of these trends could have a profound impact on U.S. security and on U.S. defense requirements. Nowhere is this more true than in the former Soviet Union.

The FSU Defense/Military Partnership initiative seeks both to lessen the likelihood of the failure of reform and to hedge against it. Its primary objective is to develop a solid partnership between the defense establishments of the United States and the former Soviet Union in an effort to encourage support for reform, develop FSU militaries responsible to democratically elected officials, encourage U.S.-FSU defense cooperation in areas ranging from regional conflicts to counterproliferation, and convince an expanding circle of officers and officials that the United States seeks a real partnership. Particular attention will be

paid to Russia, Ukraine, Kazakhstan, and Belarus — the four FSU states with nuclear weapons still maintained on their soil. Enhancing our military cooperation with these states and building partnerships with them will be crucial in facing the dangers of the post-Cold War era.



Russian Federation Minister of Defense Grachev and Secretary Aspin signing memorandum of understanding on defense contacts.

This initiative has three main components:

- **Expanded defense and military contacts**, moving beyond a series of single contacts to programs that foster ongoing relationships between individual U.S. and FSU military/defense leaders or provide concrete technical assistance.
- **Enhanced military cooperation**, expanding on unit exchanges, sister base/unit programs, and ship visits, and developing the capability for combined peacekeeping, humanitarian assistance, and other noncombat operations.
- **Support for transition and reform**, focusing on concrete measures to address pressing social concerns affecting the military, such as military housing shortages, inadequate medical care, and environmental degradation at military sites.

FY 1994 funding for this initiative comes from the Cooperative Threat Reduction line item.

Global Cooperative Initiatives

The Global Cooperative Initiatives seek to improve our ability to respond to new regional dangers while positioning us to capitalize on a number of post-Cold War opportunities. They do not, however, pre-judge when or how we should respond to a given situation. Rather, they seek to enable DoD, in cooperation with other U.S. government agencies, to prepare the ground for a more effective U.S. response if and when such a response is deemed appropriate and necessary by the President and the Congress.

More specifically, these initiatives seek to enhance DoD planning and capabilities for peacekeeping and peace enforcement operations, humanitarian assistance measures, disaster and famine relief activities, and the promotion of democracy. As such, they are only one part of what must be a national, multi-agency effort in these areas.

Peacekeeping and Peace Enforcement Operations

Traditionally, *peacekeeping* — military operations, undertaken with the consent of all major belligerents, that are designed to monitor and facilitate implementation of an existing truce agreement in support of diplomatic efforts to reach a political settlement to a dispute — and *peace enforcement* — military intervention to compel compliance with international sanctions or resolutions designed to maintain or restore international peace and security — have been seen as secondary missions for the U.S. military. They have been lesser-included cases of more demanding missions, such as fighting and winning major regional conflicts. Accordingly, planning for these missions has often been undertaken on an ad hoc basis, and funding has generally been drawn from operations and maintenance accounts as needed. As a result, these operations have often been funded at the expense of readiness, pending subsequent reprogramming or supplemental funding. Keeping our forces ready to fight requires that we do business differently in the future.

As peacekeeping and peace enforcement gain new prominence among U.S. military missions in the post-Cold War era, DoD will earmark funds for these missions to help other countries and the United Nations strengthen their peacekeeping and peace enforcement capabilities, and in so doing reduce the demand for U.S. forces. Investments in this area also will facilitate rapid military responses to decisions to commit U.S. forces to such operations; they will minimize the impact of U.S. participation in such operations on service budgets; and they will permit greater policy oversight of these operations.

Proposed funding for these initiatives is \$300 million in FY 1994: \$260 million for reimbursement of incremental DoD costs for peacekeeping and peace enforcement and \$40 million for assistance to third countries and international organizations in support of sanctioned international peacekeeping or peace enforcement activities.

Humanitarian Assistance and Disaster/Famine Relief

The rise of regional dangers on the U.S. security agenda has increased the importance of the U.S. military's role in providing humanitarian assistance and disaster and famine relief to foreign populations in need. Operations directed at alleviating human suffering and meeting the basic needs of victims of social dislocation, economic strife, political conflict, or natural disasters can, in some cases, be the best foreign policy instrument available to the United States. Humanitarian operations can also prove an effective means of addressing potential sources of regional instability before they lead to armed conflict, and of promoting recovery and nation-building after crises have occurred.

In FY 1993, \$28 million in DoD funds was appropriated for humanitarian assistance programs, \$50 million was provided for disaster relief activities, and \$10 million was allocated for disaster relief planning. In addition, \$40 million was provided in supplemental appropriations for Kurdish relief efforts in FY 1992 and \$115 million was transferred from other DoD

appropriations to provide humanitarian assistance to the former Soviet Union in FY 1992-93. Much of this assistance took the form of DoD deliveries of excess property as well as privately donated supplies — including medical supplies, clothing, shelter, food, heavy equipment, and vehicles. It also included coordinating large-scale air, land, and sea operations and evacuating refugees and disaster victims in need of medical care.

The Humanitarian Assistance and Disaster/Famine Relief initiative will consolidate a wide variety of existing programs under a single umbrella within DoD to:

- Develop and refine strategies for delivering excess DoD property, privately donated supplies, and other assistance to countries in need.
- Improve the efficiency, effectiveness, and timeliness of DoD's existing humanitarian assistance and disaster and famine relief efforts.
- Facilitate contingency planning with other U.S. government agencies as well as international and nongovernmental organizations to ensure DoD relief preparedness.
- Expand cooperative relationships with leading U.N., private voluntary, and other international organizations to facilitate non-U.S. government humanitarian assistance efforts.

Proposed funding for FY 1994 is \$48 million for humanitarian assistance and \$50 million for disaster/famine relief, including:

- **Excess property donations:** Repairs, packing, processing, warehousing, and other costs associated with preparing property for delivery.
- **Transportation assistance:** Air, sea, and overland transportation of personnel and materiel.
- **Planning and training:** Preparedness and assessment activities, including studies, exercises, and specialized training.

- **Relief activities:** Provision of shelter, food, water, and medical supplies to countries in need.

Promotion of Democracy

One of the most significant dangers in the post-Cold War era is the possibility that democratic reform in newly independent states might fail, reducing the chances that a coalition of democracies favoring peaceful means of resolving disputes will take root and flourish. One of the most significant opportunities for the United States in this new era is the chance to promote democracy in other countries and, in so doing, to promote a more peaceful world.

The Department of Defense has an important role to play in promoting democracy. Toward this end, it has requested \$50 million in FY 1994 to develop and integrate a variety of military-to-military programs and associated defense contacts as well as other activities designed to promote democracy. These efforts focus on countries other than those targeted for assistance under the Cooperative Threat Reduction initiative. The programs include:

- **Ongoing military and defense contacts** that focus on familiarizing military and defense officials from emerging democracies with appropriate roles of a professional military in a constitutional democracy, such as the Army European Command's Joint Contact Team program in central and eastern Europe.
- **Expanding such military and defense contacts** to additional countries in eastern Europe.
- **Developing similar contact programs in other regions**, namely Africa, Latin America, Asia, and the Pacific.

Promoting democracy in other countries is central to international stability and to the prospect of a more peaceful world. This relatively small expenditure of DoD resources has the potential to obviate the need for the far more costly defense efforts that might be necessary should democratization fail.

SECTION VII: DEFENSE FOUNDATIONS

FORCES READY TO FIGHT

The first priority of the Clinton-Aspin defense plan is to ensure that the United States has forces ready to fight today and in the future.

Currently, we have the best and most ready military force in the world. We have worked hard to get it that way over the past several years. Now, we face the even more difficult challenge of preserving readiness as we reduce the defense budget, draw down our overall force structure, and reorient our armed forces toward the new dangers facing us in the post-Cold War world.

Our approach to preserving readiness will be not only to identify readiness problems as they emerge and take corrective action, but also to anticipate, and thus prevent, problems from occurring through development of a readiness "early warning system." This focus on prevention guides our readiness planning and organizational innovation. It is also one of our most difficult challenges.

Defining Readiness

The first problem in addressing the issue of readiness is that there is no simple way to define what readiness is, and what it is not. Broadly speaking, almost everything DoD does is related to readiness. Yet, such a broad definition suggests that any reduction in the overall defense budget automatically reduces readiness — an overly simplistic conclusion that does not help to establish priorities in defense planning. However, too narrow a definition may shift the focus to individual units, underemphasizing the "joint" readiness we seek from our forces as a whole.

Current definitions of readiness, established during the Cold War, need to be updated to address new dangers and conform with the new defense strategy and forces that have resulted from the Bottom-Up Review. One of our primary challenges, therefore, is to define readiness broadly enough to include elements of

jointness and sustainability while reflecting the shifting requirements of the post-Cold War era.

Once an updated definition of readiness has been developed, we must proceed to establish:

- Clear and agreed-upon standards that specify the levels of performance our forces must be able to attain.
- Reliable measurements to assess whether current and future forces meet these standards.
- Responsive management structures to ensure that readiness receives appropriate attention within the policymaking and resource allocation processes.

Standards

Determining standards for readiness used to be easy: The Soviet Union was our principal enemy and the main readiness standard was a requirement to be able to halt an attack on Western Europe by Warsaw Pact forces. We no longer face a single potential adversary or have a familiar and long-standing scenario for which to prepare. Our forces may be called upon to fight on short notice in any of a number of locations or conditions, or they may have to be inserted into a civil conflict where they would seek to enforce a peace settlement among warring factions.

Traditionally, levels of readiness have been determined by specified metrics. We are working to determine whether existing standards could be supplemented or replaced by other standards more appropriate to the requirements of the new defense strategy.

Our broad standards of readiness should be determined by the ability of our forces to carry out our defense strategy, specifically the requirement to be

able to fight and win two nearly simultaneous major regional conflicts. Appropriate offices within OSD, the Joint Staff, the services, and the combatant commands will determine guidelines for establishing readiness standards.

Measurements

Once standards have been set, we must develop reliable measurements to help determine whether or not our forces are meeting the standards. Currently, we measure readiness either by looking at inputs, such as flying hours per month and steaming hours per quarter, or by examining outputs, such as C-ratings (measurements of equipment fill, manning, level of training, and so forth) for various units. The trouble with inputs is that they measure only the factors that contribute to readiness. Output measures are suspect because they are very subjective and are done on a piecemeal basis by different people judging disparate units using varied criteria.

Another shortcoming of the current readiness reporting system is that it scrutinizes most carefully the readiness of the front-line troops that would be called on first in a crisis, but doesn't assess the rest of the force as carefully. However, because most commanders will accept risks to some parts of the force structure in order to keep "cutting edge" combat troops at the highest readiness state, degradations in the readiness of these other components are often slow to be perceived.

While the current system of measuring readiness does not need to be abandoned, existing measures of readiness do need to be augmented with new approaches to evaluating troop performance. Not only are better measures of readiness needed at the individual and unit level, but we must find ways to evaluate the readiness of joint forces — thereby ensuring that our combat forces are adequately trained, equipped, and supported to conduct joint and combined operations ranging from smaller contingencies to major regional conflicts. These new measures must examine both inputs and outputs to watch for warning signs of decreased readiness. Some possible warning signs include:

- Increased tempos of operations for both units and individual personnel necessitated by either routine or crisis commitments.
- Transfers of funds out of readiness accounts to support unscheduled deployments.
- Decreases, cancellations, or deferrals of planned training or logistics support activities and functions.

To get a true picture of force readiness, we need to identify key indicators and use them to project or confirm longer-term trends. In that regard, we are watching existing indicators and developing new ones — especially measures that will allow us to prevent future readiness problems — to improve our ability to oversee and manage readiness. The following examples illustrate the complexities of readiness assessment and forecasting.

This spring, the national media reported that we had experienced reduced success in attaining both the desired number and quality of military recruits. A longer-term view, however, suggests that this reduced recruiting success came at the traditional annual low point in recruiting (April/May pre-high school graduation). Subsequently, our indicators have projected that FY 1993 recruit quality will remain above that of pre-Desert Shield/Desert Storm experience.

Similarly, it was reported that there had been a "reduced propensity to enlist." Taken alone, this might be seen as a problem. A more balanced view, however, must consider the impact of the force drawdown, with its associated reduced need for recruits, as well as the growing number of eligible youths in the recruiting pool. Doing so provides a more optimistic outcome.

Finally, it has been argued that readiness and training were reduced by our large-scale contingency operations in Somalia, Iraq, and Bosnia. It is certainly true that this year's operating tempo was exceptionally high. As a result, we had to divert funds from the operations and maintenance (O&M) account to support these efforts. Without timely corrective actions,

this can hurt readiness. To some extent, recovery in readiness and related accounts can be accomplished through reprogramming, as was done in this year's supplemental and reprogramming requests. However, in order to preclude, or at least to mitigate, the impact of future contingency operations on readiness, the FY 1994 defense budget request included \$448 million for contingency operations: peacekeeping/peace enforcement, humanitarian assistance, democracy building, and disaster relief.

By expanding and improving our measures of readiness, in line with standards agreed upon by OSD, the CINCs, and the services, we can get a better appreciation of the status of our forces, and what supplemental steps are needed to maintain their readiness.

Management

The last step in the process of improving our means of maintaining high combat readiness is the creation of management structures within DoD that ensure that readiness concerns permeate all levels of decision-making.

First, there must be no doubt that preserving readiness is the cornerstone of our new defense strategy. The Clinton Administration and its defense team have made maintaining forces ready to fight the number one defense priority. This emphasis will be reflected, for example, in the Defense Planning Guidance and other key DoD planning and programming documents. These documents direct the services, which have principal responsibility for readiness, to make combat readiness the first priority in their programs and budgets.

In addition, several organizational initiatives related to readiness are underway. The OSD staff is being reorganized to create a new Assistant Secretary for Personnel and Readiness. This position will provide a single focal point for overseeing all aspects of readiness. There are also three readiness committees that have been formed to examine different aspects of the issue.

- **Senior Readiness Council.** This senior-level forum is chaired by the Deputy Secretary of Defense and includes the Vice Chairman of the Joint Chiefs of Staff and the service chiefs, with the Assistant Secretary of Defense for Personnel and Readiness serving as Executive Secretary. The group was created to bring together the key military leaders who are responsible for advising the Secretary and the Deputy Secretary of Defense on readiness policy. Specifically, the group will be attempting to link near-term considerations with longer-term programs and to alert OSD to any critical readiness problems that may occur. The panel will receive and consider recommendations made by the Readiness Task Force and the Readiness Working Group (discussed below), and other sources.

- **Readiness Task Force.** This group, operating under the Defense Science Board and headed by General Edward C. "Shy" Meyer (USA-Ret.), consists of eight retired general and flag officers. It was created to provide the Secretary and Deputy Secretary of Defense expert outside advice and alert them to critical readiness issues. The Meyer panel will meet as required and periodically visit units in the field in order to develop insights on readiness matters and provide recommendations to the Secretary. It will focus on establishing key readiness indicators — especially those that provide early warning of future problems — and alerting the Secretary and the Senior Readiness Council to critical readiness concerns it may identify.

- **Readiness Working Group.** This group, to be chaired by the Assistant Secretary of Defense for Personnel and Readiness, will include senior representatives from the Joint Staff, the services, and offices within OSD. It will be the primary forum in DoD for raising, discussing, evaluating, and recommending solutions to readiness issues. The Readiness Working Group will also be responsible for overseeing the implementation of readiness initiatives, programs, and decisions. The group will charter studies of readiness issues, ensure that DoD readiness goals are met, convey the Secretary of Defense's readiness decisions throughout the department, and develop and use readiness early-warning indicators to alert DoD and advise the Secretary on readiness-related issues.

Funding Issues

Despite the promise of these new standards, measures, and organizations, without adequate funding, readiness will decrease. Too often in the past, readiness has suffered when increased operating tempos, caused by crisis responses around the globe, have forced the services to draw from the same operations and maintenance accounts that fund readiness. In the first years of the post-Cold War era, we have already been involved in many such operations, from peacekeeping and peace enforcement to humanitarian assistance and disaster relief.

This is especially true in the case of smaller-scale operations where reimbursements from other sources

— whether contributions from coalition partners or a supplemental appropriation from Congress — are not readily available. Frequently, when reimbursements to the services have been received, they have come after decreases in readiness — as a result of missed training or deferred maintenance — have already occurred.

The establishment of a special peacekeeping account in the FY 1994 budget to fund U.S. commitments to such operations will help to avoid siphoning off O&M funds needed for readiness. However, this fund is insufficient to support larger, long-term deployments of U.S. forces to these operations. In the future, DoD will press to get such contingency operations funded through supplemental budget requests as rapidly as possible.

SECTION VII: DEFENSE FOUNDATIONS

FAIRNESS TO PERSONNEL

People are at the heart of our armed forces. The best planning, the highest-technology weapons, and the most well-conceived strategy will have no impact if the military personnel upon whom the planning, weapons, and strategy depend are not fully motivated and trained.

In order to meet Cold War threats, we created the most highly professional, trained, and motivated force in the world. The results of those efforts were clearly seen in the overwhelming victory achieved in Operation Desert Storm. To meet the new dangers and seize the new opportunities of the post-Cold War environment, we need to maintain those qualities in our people.

During this era of shrinking budgets and force reductions, we have a responsibility to those individuals remaining in the military to maintain their quality of life and to ensure that they retain the high level of professionalism they have worked so hard to attain. We also have a responsibility to treat fairly and ease the transition of those who will be leaving the military, as well as the people and communities who supported our forces—from defense workers to the communities losing bases or defense plants.

Our Commitment to People in the Force

Our first challenge as we reduce the size of our defense structure is to make sure that our military remains the most dedicated and professional in the world. With the range of activities that America's armed forces will be involved in, it is more important than ever that we provide the full range and quality of support, training, and education that our troops need. In order to meet this challenge, DoD will pursue the following objectives:

- **Maintain high recruit quality.** We must continue to ensure that we recruit the best young men

and women we can for our armed forces. Thus far, the services have continued to meet their recruiting objectives with top-notch people, although educational achievements of incoming personnel have declined slightly from the unprecedented highs of the past few years. Somewhat worrisome is the fact that some surveys indicate that interest in joining the armed forces is beginning to decline among America's youth. This appears to be due, in part, to the uncertainty they perceive as to the long-term viability of a military career. We plan to take steps to halt both these trends. Two steps that will help are to provide adequate funding and support for our advertising and enlistment bonus programs so that they continue to work effectively.

- **Successfully implement social changes.** Our armed forces will be going through significant social changes as we seek to expand the number and types of opportunities available to service women and to implement President Clinton's decision on homosexuals in the military. We must implement these new policies in a careful, practical, fair, and consistent way, while preserving the current high levels of combat effectiveness and unit cohesion in our armed forces.

- **Maintain the quality of life of our military personnel and their families.** Our ability to attract and retain high-quality men and women in the armed forces will be heavily influenced by our ability to provide a military lifestyle that encourages talented people to join and remain in the military. To achieve this goal, we are implementing a proactive, "people first" strategy. We must provide adequate compensation, benefit levels, and "quality-of-life" incentives, while continuing to improve our welfare and recreation activities, dependent education, child development, youth activity, and family support programs. We must also monitor the tempo of operations of our deployed forces so that our troops and their families will not be hit so hard by frequent, lengthy separations.

- **Training.** We must also provide rigorous, realistic, and challenging training to our troops if we are to keep their readiness high. We are determined to maintain adequate funding for field training and related programs, such as expanded use of combat simulators.

- **Limit disruptions as the personnel drawdown proceeds.** Perhaps our most important goal is to manage the personnel drawdown process intelligently, with as little disruption to our armed forces as possible. As the drawdown proceeds, there will inevitably be some upheavals and reorganizations. We will face a temporary increase, in the near future, in relocation moves for separated and realigned staff, but we are determined to try and minimize these moves and disruptions.

Our Commitment to People Leaving the Force

We owe a great deal to all those who have chosen to serve in the Department of Defense, and we have a responsibility to treat those who separate from DoD with the compassion and fairness they deserve. Several programs are intended to minimize involuntary separations and ease any separations that must take place.

Voluntary Separation Initiatives (VSI) and Special Separation Benefit (SSB) Programs. DoD ended FY 1992 with an active-duty military end-strength some 17 percent, or 366,000, below the peak end-strength of 2,174,000 in FY 1987. We must still draw down by approximately 400,000 more people, to 1.4 million by FY 1999. Until now, most of the reductions have been achieved by attrition, reduced accessions, and our very successful voluntary separation programs. More than 22,000 service members have already applied for separation under the VSI and SSB programs this year; this is more than half of our FY 1993 goal of 30,000. We will continue to use these programs wherever possible to achieve further necessary personnel reductions.

Early Retirement Authority. While the VSI and SSB programs are working well for members with 6 to 15 years of service, these programs have not induced large numbers of DoD personnel with more than 15 years of service to separate. Temporary early retirement authority will complement other programs and help us shape the 15- to 20-year segment of the force. The goal of this program is to supplement the voluntary separation programs so that our forces can maintain an appropriate mix of skills and experience as they are reduced in size. The temporary early retirement program will help reduce those overstrength skills, grades, and year groups and minimize involuntary separations.

Reserve Component Separation Initiatives. The reserve component transition initiatives enacted by the Congress and implemented by DoD include special separation pay for those with more than 20 years of service, early qualification for retirement pay (at age 60) for those with 15 to 20 years' service, separation pay for those with 6 to 15 years of service, post-separation use of commissaries and exchanges, continuation of Montgomery G.I. Bill educational assistance, and VSI/SSB and temporary early retirement programs for selected full-time reservists.

Civilian Separation Incentives. Like our plans for active military and reserve personnel separations, plans for civilian separations will minimize involuntary departures. DoD intends to reach the civilian reduction level first by attrition, then by using the authorized buyout provisions recently passed by the Congress, and last, by involuntary separations. We will also continue to adhere to civilian hiring restrictions already in place, replacing two civilian employees for every five employees who leave.

Transition Assistance Programs. There are other programs being undertaken to ease the transition for personnel leaving DoD:

- **Extended medical care.** We will pay the government portion of health insurance premiums for an additional 18 months beyond the release date of employees who are involuntarily separated.

- **Separation assistance counseling.** There are several programs available to help departing DoD personnel find new jobs. The Verification Program provides a form with a service member's military experience, training history, associated civilian-equivalent job titles, and educational credit information. Another automated program registers mini-resumes of civilian employees, military members and their spouses in the Defense Outplacement Referral System. Through this program, the Department, in cooperation with the Office of Personnel Management, refers the resumes of DoD personnel to federal and other public and private-sector employers. The Defense Priority Placement Program (PPP) remains the backbone of our internal civilian placement efforts, providing fine-tuned PPP policies that are responsive to employee needs. Registrants in this automated program average about 7,000 per month, and we place approximately 500 employees monthly. To accommodate the transition needs of individuals stationed overseas, DoD has sponsored job fairs in Europe and Asia.

- **Relocation assistance.** This is a Congressionally-directed program that operates through the family centers at military installations. It provides planning assistance, community information, and emergency aid during the relocation process.

- **"Soft landings" for troops.** To address the transition needs of military personnel, DoD civilians, and defense contractors and, at the same time, place talented individuals in public service jobs, we are establishing a program to encourage separated individuals to go into teaching, law enforcement, health care, and environmental restoration and preservation. We are also establishing a public and community service jobs registry containing both resumes and job vacancy notices.

- **Retraining.** DoD is helping displaced military, civilian, and contractor personnel prepare for new employment by working with other federal agencies to provide employment and retraining services.

- **Department of Veterans Affairs.** We have also provided significant funding to the Department of

Veterans Affairs to implement the Service Members Occupational Conversion and Training Act, which will provide training to veterans in need of additional civilian job skills.

Assistance to the Larger Defense Community

We have established the Defense Reinvestment Initiative to aid the people and communities that have long supported our national defense but are now losing defense facilities in their area. This initiative, in conjunction with others from DoD and other government agencies, will help affected communities adjust to the defense drawdown.

Base Closure and Redevelopment. DoD is working with the Commission on National and Community Service to explore how the Civilian Community Corps can assist us in addressing the needs of communities where bases are being closed. Examples might include (nontoxic) environmental base cleanup activities, installation maintenance, conservation programs, and wildlife protection.

Continued Commitment to Society. To further address the school dropout problem, the Department will fund a Civilian Youth Opportunities pilot program, administered by the National Guard. The program will provide military-based training and community service opportunities to improve the life skills and employment potential of youth who drop out of school. We also are implementing a pilot program through the National Guard to provide health care services to medically underserved communities and populations. DoD has doubled the size of the Junior Reserve Officers Training Corps (JROTC) program, which uses retired defense personnel to teach leadership, citizenship, and responsibility to high school students. Combining JROTC instruction with vocational training and academic instruction, we have developed the JROTC Career Academy Program directed toward at-risk youth in inner-city high schools.

Demonstration Programs in Job Development. DoD is working with the Department of Labor to assist

employees adversely affected by base closures and realignments and contractor cutbacks. We have transferred \$100 million of the \$150 million authorized to the Department of Labor for the Defense Conversion Adjustment Program to help displaced defense workers prepare for and find new jobs, and to provide them with relocation and other support services, such as transportation and child care. In addition, three base closure locations (Castle Air Force Base, Philadelphia Naval Shipyard, and Williams Air Force Base) were among 12 locales awarded demonstration grants to provide job development and job search services beyond those traditionally available through the Labor Department program.

Defense Diversification Program. Additional funds, authorized and appropriated in FY 1993, have been transferred to the Department of Labor for an expanded assistance initiative, called the Defense Diversification Program. New provisions include access to training assistance 24 months in advance for DoD civilians at bases slated for closure and needs-related stipends for displaced defense workers while on training.

Department of Commerce. The Department also transferred \$50 million appropriated in FY 1991 and \$80 million appropriated in FY 1993 to the Economic Development Administration of the Department of Commerce to help communities implement their adjustment plans.

SECTION VII: DEFENSE FOUNDATIONS

ROLES AND MISSIONS

To ensure that our armed forces are properly aligned to meet future challenges, we must continually evaluate the division of labor — the allocation of roles, missions, and functions — among the services and combatant commands.

This section describes the Bottom-Up Review of:

- **Roles.** The broad and enduring purposes for which the military services were established by Congress in law;
- **Missions.** The tasks assigned by the President or Secretary of Defense to the combatant commanders; and
- **Functions.** The specific responsibilities assigned by the President or the Secretary of Defense to enable the services to fulfill their legally established roles.

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 requires the Chairman of the Joint Chiefs of Staff (JCS) to “periodically recommend such changes in the assignment of functions (or roles and missions) as the Chairman considers necessary to achieve maximum effectiveness of the Armed Forces.”

In March, Secretary Aspin forwarded to the Congress the Chairman of the Joint Chiefs of Staff’s *Report on the Roles, Missions, and Functions of the Armed Forces of the United States* — the second such version of that report since Goldwater-Nichols became law. In his letter transmitting the report and in a subsequent directive issued throughout DoD in April, the Secretary provided his decisions on the Chairman’s recommendations. Within OSD, the services, and the Joint Staff, 31 working groups were formed to implement the Secretary’s decisions. Deliberations commenced immediately. In most cases, 60-day implementation plans or 90-day “fast track” study results were for-

warded to the Secretary to keep him apprised of progress on the actions.

The most encompassing action taken — one which has broad implications for the conduct of evolving, post-Cold War missions such as peacekeeping — involves placing the majority of U.S.-based forces, including the Atlantic Fleet, Forces Command, Air Combat Command, and Marine Forces Atlantic, under a single, unified combatant command. The U.S. Atlantic Command was selected because it is particularly well-suited to assume this new mission. The principal purpose of the new command is to ensure joint training and readiness of forces stationed in the United States. As a result of this change, forces would already be accustomed to operating together and could therefore be deployed efficiently to overseas locations when crises arise. Consequently, overseas CINCs will be able to focus more on in-theater operations and less on deployment readiness concerns.

In addition to developing jointly trained forces, the U.S. Atlantic Command would be assigned other important new functional responsibilities:

- Supporting U.N. peacekeeping operations and training units for that purpose.
- Assisting with disaster relief operations in the United States and fulfilling other requirements for military support to civil authorities when requested by state governors and as directed by the President.
- Planning the land defense of the United States.
- Improving joint tactics, techniques, and procedures.
- Recommending and testing joint doctrine.

Depot maintenance represents another area examined in the most recent Roles and Missions Report

where important follow-on work is underway to eliminate redundancies. Government depots comprise a huge organization of some 130,000 civilians and 2,000 military personnel spread across 30 facilities. Today, with the ongoing reductions in the U.S. force structure, DoD's depot capacity exceeds requirements by 25 to 50 percent. The Base Realignment and Closure (BRAC) Commission recommended closing seven depots and realigning three others. A DoD working group is reviewing additional consolidations and new management schemes. The goal is to reduce depot capacity significantly so as to align it more closely with our reduced force structure and overall requirements.

Another action resulting from the Roles and Missions Report and the Secretary of Defense's directive is the establishment of an Executive Agent management structure for DoD's vast training, test, and evaluation (TT&E) establishment. The services have agreed to pool their TT&E infrastructures and resources under a joint board of directors comprising senior officers from the four services. This action will streamline and vastly improve the efficiency of this large complex of facilities and ranges.

The April directive also identified five areas for further study in conjunction with the Bottom-Up Review (four of which are addressed in this section):

- Expeditionary ground force roles and requirements.
- Service air power roles and force requirements.
- Service contributions to meeting overseas presence needs.
- Service responsibilities in new mission areas, such as peacekeeping.
- Responsibilities assigned to the active and reserve components (examined in the next section).

In each of these areas, the focus was on preserving the benefits that derive from competition among the services, while eliminating unnecessary and duplica-

tive practices. As Secretary Aspin and the Chairman of the JCS have both stated, fielding unique but complementary capabilities in different military services can be an efficient use of resources. It may be necessary to assign a particular function to more than one service in order to ensure that critical capabilities are available when and where they are needed. Moreover, cross-service diversity can foster greater innovation, seriously complicate enemy planning, and hedge against possible breakthroughs in countering a particular capability.

The Bottom-Up Review determined that it is necessary to maintain multiservice capabilities in all of the areas listed above. However, where those capabilities involve the use of similar weapon systems or platforms, special attention must be given to ensuring that the services adopt common approaches, to the extent possible, in several areas. These include:

- Developing standard tactics and techniques, adopting common doctrinal approaches, and carrying out joint training where coordination with other force elements is required.
- Consolidating support and training infrastructures to reduce excess capacity.
- Exploiting opportunities to develop and field common weapon systems and subsystems.

Expeditionary Ground Forces

As was discussed in Section IV, the Bottom-Up Review assessed a number of alternative force mixes weighted toward ground, sea, or air components, but validated the need for a balanced force that is highly responsive to a broad array of possible contingencies.

The review of expeditionary ground force requirements included the full range of contingency and expeditionary forces: active Army heavy (armor and mechanized), light, and specialized airborne and air assault forces; all Marine Corps forces, including the organic contributions of the Marine air component; and special operations forces. These forces were

examined for their contributions under a range of circumstances and conditions.

Under our proposed defense strategy and force structure, expeditionary ground force capabilities appear sufficient for any single contingency, large or small. However, if we had to deal with more than one contingency at a time, such a scenario would place extraordinary demands on certain elements of the force, such as Army airborne and air assault forces, Marine expeditionary forces, and some special operations forces.

Smaller-scale operations also place special requirements on "light" forces and on special operations forces. Threat and terrain conditions and the lack of available infrastructure often exclude the use of armor or mechanized forces in such circumstances. So-called light forces (Army infantry, airborne, and air assault) and medium forces (Marine air-ground task forces) may be required to perform a variety of functions, including forcible entry, assuming access is contested. For contingencies extending over lengthy periods of time, consideration must also be given to providing an adequate rotation base. Reserve component forces might be called upon in these situations.

Adoption of new missions such as peacekeeping, humanitarian assistance, and disaster relief, or a significant expansion of existing missions such as increased amphibious ready group presence in maritime regions, has the potential to place far greater demands on the operating and deployment tempos (time deployed) of our forces. Combat force contributions to peacekeeping operations, for example, will in most cases be infantry and SOF-intensive and will likely involve force commitments of an extended duration. However, planned reductions in light infantry forces and rotation factors will limit the size and number of commitments these forces can support. Moreover, once committed to peacekeeping operations, these forces will not be readily available to respond to crises elsewhere. Again, we are exploring greater use of reserve component forces as a means of relieving the burden on our active forces and increasing our flexibility to perform such operations.

Theater Air Operations

The Bottom-Up Review's assessment of theater air operations drew heavily on Joint Staff analyses exploring the contributions of various service air components under a variety of scenarios and circumstances. However, some independent modeling was conducted within OSD which looked specifically at the capabilities of modern munitions against large armored forces.

As with ground force operations, theater air operations require a careful sequencing of forces in the early stages of conflict. If control of airspace is contested, air superiority must first be established. When airspace is contested in maritime areas or when air bases ashore are not available, Marine and Navy fighter aircraft play a crucial role. In certain circumstances, Marine and Navy air elements, along with long-range bombers, will be the only sources of theater air power available. In contingencies where access to local land-based facilities is well assured and logistics support can be maintained, land-based air-superiority aircraft will combine with Navy and Marine tactical aircraft to provide the most capable mix of forces possible. Joint Staff war-gaming analysts explored air-superiority requirements against a variety of potential threats. In all cases, land- and sea-based air-superiority aircraft were found mutually supportive and necessary.

Interdiction operations and attacks on strategic targets could begin almost immediately with long-range missiles, stealth aircraft, and aircraft capable of delivering standoff weapons. Once air superiority was assured, emphasis would be placed on interdiction efforts. Strike platforms from all services would contribute, adding confusion to enemy planning and overwhelming remaining enemy air defenses. Bombers could play especially important roles in the early stages of a conflict, once outfitted for delivery of precision-guided munitions.

Engaged ground forces will require close air support. Air Force, Navy, and Marine fixed-wing attack aircraft and Army and Marine attack helicopters will provide this support. In implementing another recommendation of the recent Roles and Missions Report,

joint doctrine is being updated to better account for the contributions of attack helicopters. Work must continue in the area of integrating long-range rocket artillery fire with air-delivered munitions.

The danger presented by the proliferation of weapons of mass destruction, particularly nuclear weapons, places additional demands on theater aviation. First, development of conventional counterforce capabilities will be necessary. Second, while we believe the Navy and Marine Corps can prudently do away with the tactical nuclear mission of their air components, a limited number of Air Force multirole aircraft must remain capable of delivering theater nuclear weapons.

One other promising change in the area of theater aviation is the integration of Navy and Marine Corps fixed-wing fighter/attack aircraft. Three Marine Corps F/A-18 squadrons and one EA-6B squadron will participate in aircraft carrier deployments. We will also examine further integration of Marine Corps fighter/attack squadrons in support of carrier operations, while ensuring that such integration does not disrupt the integrity of the Marine air-ground task force concept.

On the programmatic side of theater air operations, the Bottom-Up Review analyzed the potential for joint Air Force-Navy development of single aircraft types and components to meet the requirements of both services at substantial cost savings. As a result, the Joint Advanced Strike Technology Program has been launched with the aim of achieving far greater commonality of components and "jointness" in the next generation of Navy and Air Force strike aircraft.

While it is clear that all services will retain important air power roles, more work must be done to ensure that air and missile contributions are better integrated. This will remain a critical area for ongoing analysis.

Overseas Presence

Overseas presence requirements are apportioned among the services according to the needs of regional

commanders. Given the diversity of situations and locations where U.S. interests are represented in peacetime, multiservice capabilities are crucial to maintaining adequate overseas presence as the overall size of our force is reduced.

Throughout the Cold War era, land-based ground and air forces constituted the majority of U.S. forces stationed overseas. Guided by a strategy of forward defense and containment, these forces were deployed in significant numbers and were supported by a relatively large forward base infrastructure.

Today, our overseas presence is both declining and being restructured in response to the changed strategic environment. In some regions, such as Europe, our land-based presence, both troops and bases, is declining sharply. In other regions, like the Pacific, where we had fewer forward-stationed forces to begin with, the decline is less dramatic. In still other regions, such as the Persian Gulf, the post-Cold War period has brought with it more, not fewer, demands for presence.

The decline in the number of U.S. forces permanently stationed abroad and the accompanying draw-down in bases and facilities to which we have historically had access means that our remaining overseas presence forces and facilities take on added significance in implementing our regionally-oriented defense strategy.

We will continue to examine innovative concepts to fulfill our commitments as we reduce our overall overseas presence, ensuring, for example, that increased operating tempos and a shrinking rotation base do not degrade combat readiness. A number of these concepts — including a reserve/training carrier, adaptive and joint force packages, and combined exercises of land, air, and naval forces with U.S. friends and allies — have already been discussed. Over time and in consultation with our friends and allies, adjustments will continue to be made in our overseas presence that recognize the limitations of a smaller U.S. force structure while continuing to serve our interests abroad.

Service Roles in New Mission Areas

Peacekeeping, peace enforcement, humanitarian assistance, and disaster relief operations place new demands on U.S. armed forces and require some redefinition of missions and functions, with an attendant impact on resource allocation. Of these potential missions, peacekeeping and peace enforcement operations will be the most demanding. Here again, the flexibility of complementary, multiservice capabilities is a tremendous asset.

As noted earlier, one prominent step in our response to this new requirement has been to make the U.S. Atlantic Command responsible for evaluating and refining joint and combined doctrine for peacekeeping and other peace support operations and for developing joint training programs and exercises. In terms of the distribution of other roles and missions, the military services will retain responsibility for individual and unit training and general leadership preparation for peace support operations, while regional commanders will be responsible for operational and contingency planning.

Force planning and the associated force structure for peace enforcement operations will resemble those for major (or lesser) regional conflicts, as was discussed in Section III. Peace enforcement is a form of armed combat requiring tailored forces from all components, as determined by a regional commander. Service functions in these types of operations will differ little from those required for other combat operations.

Planning for peacekeeping requires different techniques and a different mix of combat and support forces. Effective multinational staff and leader training and familiarity with certain noncombat techniques

(such as negotiation and integration of nongovernmental and private volunteer organizations into the overall effort) will be critical to the outcome.

Peacekeeping operations typically will also require heavier concentrations of combat support and combat service support forces than is the case for combat operations. Emphasis will be placed on medical, engineering, transportation, and command and control capabilities. Depending on the anticipated level of U.S. participation in peacekeeping operations, the mix of active and reserve forces in these areas may need review.

Combat forces for peacekeeping will usually include both ground and air components, as well as maritime forces if blockades are to be enforced or naval interdiction is required. Ground forces will likely be infantry-intensive, depending upon the scenario, and could, in some cases, severely strain overall "light" force capabilities. Air contributions will mostly involve supply and reconnaissance assets. As a follow-on to the Bottom-Up Review, we will continue to evaluate overall force requirements for peace support operations.

A Concluding Comment

The Bottom-Up Review has provided an important opportunity to further clarify service roles, missions, and functions in selected areas and, therefore, build on the recommendations of the Roles and Missions Report. In each of the five areas examined, the need for multiservice capabilities was reaffirmed. However, several important matters raised in the Bottom-Up Review will require further attention as the process of defining America's post-Cold War security needs continues in the months ahead.

SECTION VII: DEFENSE FOUNDATIONS

RESERVE COMPONENT FORCES

Reserve component forces are an integral part of our armed forces and are essential to the implementation of our defense strategy. Reserve forces were key to our success in the Persian Gulf war, clearly demonstrating their commitment, dedication, and professionalism. After Iraq's invasion of Kuwait, reserve volunteers from all of the services were among the first military personnel to deploy — literally thousands of reservists volunteered to be activated in the initial days of the operation. The Persian Gulf War, which required the largest mobilization and deployment of the reserve component since the Korean conflict, was also the first major test of our Total Force policy, instituted in 1973 to integrate the active and reserve components of our armed forces more closely with one another.

Since the inception of the Total Force policy, our National Guard and reserve forces have been sized and structured in much the same way as our active forces — which, during the Cold War years, required that they be able to meet the demands of a global conflict with the Soviet Union and the Warsaw Pact. During the 1980s, major improvements were made in the readiness of reserve forces for wartime missions. The reserve component structure also was expanded significantly — the Selected Reserve (those units and individuals within the overall Ready Reserve structure designated as essential to wartime missions) increased by some 35 percent, to 1,150,000 personnel from 850,000.

Adapting the Reserve Components to Address New Dangers

Today, new regional dangers have replaced the global Soviet threat and, as with our active forces, we must adapt the reserve components to meet these new challenges. Our approach is to seek “compensating leverage”; that is, to use the reserve components to reduce the risks and control the costs of smaller active forces. Compensating leverage does not mean maintaining larger Guard and reserve forces. Rather, it

means making smarter use of the reserve component forces that we have by adapting them to new requirements, assigning them missions that properly utilize their strengths, and funding them at a level consistent with what will be expected of them if we have to use them during a crisis or war.

One of the most important tasks is to define explicitly the roles and missions we expect the reserve components to perform in the new security environment. During regional contingencies, Guard and reserve forces will continue to provide — as they have in the past — significant support forces, many of which would deploy in the early days of a conflict. Reserve component combat forces will both augment and reinforce deployed active forces and backfill for active forces deployed to a contingency from other critical regions.

Guard and reserve forces also will help promote international stability and security during peacekeeping, peace enforcement, and humanitarian assistance operations. Missions appropriate to the reserve components include support for active forces engaged in such operations, including strategic airlift, service support, civil affairs, and other capabilities. During prolonged operations, or when active forces redeploy during a major regional conflict, reserve forces are available to provide a rotational or replacement base.

Finally, the Army and Air National Guard will continue to serve as the first line of defense for domestic emergencies. They will provide forces to respond to natural disasters, domestic unrest, and other threats to domestic tranquility. They also will provide air defense of the United States and protect U.S. airspace sovereignty.

In some areas, the reserve component force structure is well suited to future needs. In others, too much force structure exists and organizations are not prop-

erly organized, trained, or equipped to undertake new missions. Described below, for each of the services, are the changes we intend to make in the reserve components to adapt them to the new environment.

Air Force Reserve Forces

Increased investments in the Air Force Reserve and the Air National Guard during the last two decades have produced forces able to meet the demanding missions given to them. All of the roles already assigned to the Air Reserve components, from aerial refueling to airlift to air combat, are well suited to our future needs. We also intend to assign new or expanded roles to the Air Reserve components in several important areas. At the same time, the end of the Cold War has made necessary some reductions in these force elements.

The Air National Guard will assume a larger share of the air defense mission in the United States, including manning and operating 1st Air Force Headquarters and all U.S. regional and sector operations centers. The total number of Air National Guard air defense interceptor squadrons and aircraft will be reduced in light of the virtual elimination of the long-range bomber threat.

Air National Guard and Air Force Reserve units will also assume an increased share of aerial-refueling and airlift operations — a task they have performed so well in past operations, like Desert Shield/Desert Storm. Also, for the first time, B-52 and B-1 heavy bombers will be transferred to Air National Guard and Air Reserve units. Finally, both the Air National Guard and the Air Force Reserve will undertake occasional short-duration peacetime fighter deployments overseas to help reduce personnel demands on the active Air Force and to meet surge requirements.

Finally, there will be reductions in Air Reserve component fighter wings. As a result of the Bottom-Up Review, it was determined that 20 fighter wings would be required to fight and win two nearly simultaneous

major regional conflicts. This allows for a significant reduction in the total number of U.S. fighter wings from the Cold War level. At the same time, peacetime presence needs, including an active rotation base, require us to maintain a minimum of 13 wings in the active force. Thus, the active Air Force will be reduced from 22 general purpose fighter wings in 1991 to 13 wings, and the reserve force will be reduced from 12 to seven wings, along with a restructuring and reduction of selected support elements. The resulting active-reserve mix will help reduce costs while maintaining adequate levels of readiness, overseas presence, and warfighting capability across the entire Air Force.

Naval Reserve Forces

The Naval Reserve has many units that simply are not needed for regional contingencies. During the Cold War, a substantial number of Naval Reserve ship augmentation units were maintained to increase manning to wartime requirements and to replace battle casualties. Now that new technology has automated many ship functions and the threat posed by a blue-water Soviet navy has disappeared, these requirements have declined significantly.

Some units will be reoriented to missions that support a high tempo of peacetime naval operations, while providing a surge capability to augment the active force during contingencies. The resulting Naval Reserve will be smaller, more specialized, and more immediately effective in responding to a range of potential operations, including the needs of two nearly simultaneous conflicts.

The demanding peacetime tempo of naval forces means most ships must be manned by active-duty crews. Ships will be placed in the Naval Reserve Fleet (NRF) where the need for a high tempo of peacetime operations is limited. For example, we will be substantially increasing the Naval Reserve's role in mine warfare by placing additional minesweepers and mine countermeasure ships in the Naval Reserve Fleet. We

also expect to retain about ten frigates (FFG-7s) in the NRF.

In addition, we are proposing a major innovation in the force structure for Naval Reserve ships — placing an aircraft carrier in reserve status. In peacetime, this carrier, with a largely full-time crew, would conduct training missions for active and reserve aviators, and could be available for limited deployments overseas. In a war that called for a very large force and mobilization, the reserve carrier and its air wing could be deployed to a conflict theater relatively expeditiously.

A single reserve carrier air wing composed of Navy and Marine Corps squadrons will be created. The Naval Air Reserve will also have significant responsibilities in the areas of antisubmarine warfare and countermine operations. For example, the Navy intends to integrate active and reserve mine countermeasure helicopter squadrons.

Marine Corps Reserve Forces

The Marine Corps Reserve is a relatively small force — representing only 19 percent of total Marine Corps end-strength. It is characterized by high prior-service officer accessions and the integration of Marine Corps Reserve combat units at the smaller unit level. Such characteristics have given the Marine Corps Reserve an ability to deploy and integrate itself effectively with active forces with minimal “train-up” time following mobilization. For example, during Operation Desert Storm, more than 50 percent of the Marine Corps Reserve was activated and employed, including some two-thirds of the reserve combat structure.

Marine Corps Reserve forces, which have long been designed and structured to augment and reinforce expeditionary operations in distant regions, are well suited to the challenges of the post-Cold War era and require only limited changes in their composition. We plan to retain a Marine Corps Reserve end-strength of

about 42,000, slightly larger than planned under the Base Force, to ensure that the Marine Corps Reserve can fulfill both its augmentation and reinforcement roles.

Army Reserve Component Forces

Achieving an Army total force capable of meeting new security requirements demands adapting the Army National Guard and the Army Reserve to the new defense strategy, improving and accelerating the process of readying combat forces for deployment, and utilizing the Army Guard and Reserve in areas where they have performed effectively and responsively in the past. Currently, there are about 700,000 personnel in the U.S. Army Reserve and National Guard. As the reserve structure is realigned to support the new defense strategy, end-strength in the Army reserve components will decline to about 575,000 by 1999.

Support Forces. Combat support and combat service support (CS and CSS) units in the Army Reserve are able to deploy rapidly and be integrated effectively into the active force — a fact that was demonstrated clearly during the Persian Gulf conflict. Our reliance on the reserves for CS and CSS units in the future will depend on how quickly we can activate them in a crisis, as well as on the size of the residual active-duty support forces needed for peacetime missions. We plan to expand the role of Army reserve component CS and CSS units in key areas to provide additional support for Army combat units and other U.S. forces involved in combat operations.

Reorganizing the Army National Guard. The Army National Guard will transition to a combat force of about 37 brigades, including 15 enhanced readiness National Guard brigades, to execute the strategy of the Bottom-Up Review, to provide strategic insurance, and to support civil authorities. Within the overall force structure, the focus will be on the readiness initiatives directed toward the 15 enhanced readiness brigades as well as combat support and combat service

support needed to execute the strategy of winning two nearly simultaneous major regional contingencies.

The 15 enhanced readiness Army National Guard brigades will be organized and resourced so that they can be mobilized, trained, and deployed more quickly to the fast-evolving regional conflicts that we expect in the future. These brigades will be able to reinforce active combat units in a crisis. The goal is to have these brigades ready to begin deployment in 90 days.

The other Army National Guard combat forces, maintained at lower readiness, are needed as well for:

- **Extended Crises.** The warfighting analysis of the Bottom-Up Review focused on regional crises where an enemy invasion of its neighbor is countered by an early American response that results in a quick and decisive military victory for the United States and its allies. In cases where a large scale American deployment to a region successfully deters an invasion but requires forces to remain in place over an extended period, additional Army National Guard combat units will provide the basis for the rotational forces.

- **Peace Operations.** The United States should have the option to provide forces to engage in peace-keeping or peace enforcement when it is in the country's interest. Generally, active duty forces would be used in the initial stages of such operations. Protracted commitments to peace operations could lower the overall readiness of U.S. active duty forces over time, and in turn, reduce our ability to fulfill our strategy to be able to win two nearly simultaneous major regional conflicts. To avoid such a path to decreased readiness, the Army Guard and Reserve forces must be prepared to share the burden of conducting these operations.

- **Deterrent Hedge.** The collapse of the Soviet Union has greatly reduced the imminent threat to U.S. vital interests in Europe and the Far East. The reduced threat has permitted the Defense Department to make significant reductions in force structure and military

end-strengths of the Total Force (both active and reserve). However, it remains prudent to maintain a hedge against the possible failure of democratic reforms in Russia, Ukraine, and elsewhere in the world. The additional reserve component force structure provides a hedge that could form the basis of an expanded American force structure and serve as a deterrent to future adversarial regimes that could threaten U.S. interests.

- **Domestic Missions.** In addition to the defense missions discussed above, Army National Guard and reserve forces are called upon to meet domestic dangers such as natural disasters and civil unrest. Substantial numbers of reserves must be available during both peacetime and wartime to support civil authorities in responding to domestic crises. The Army National Guard and reserve force structure provides added capability to respond to external conflicts and to support civil authorities at home.

Readiness and Training Initiatives

A series of readiness and training improvements is necessary to ensure that the reserve components are able to meet the demands of the new defense strategy. Improvements are particularly necessary in the Army because of the demanding roles that Army National Guard and Army Reserve forces may be called upon to perform.

During the Persian Gulf War, several National Guard brigades were mobilized, but the needed post-mobilization training of those brigades was not accomplished as quickly as had been hoped or expected. Important lessons about readiness and training were learned from this experience.

Following the Gulf War, the Army's active and reserve components initiated a series of efforts reflecting the experiences of that conflict — the Army's Bold Shift program, the Army National Guard's Project

Standard Bearer, and the Army Reserve's Project Prime. Title XI of the 1993 Defense Appropriations Act added a series of requirements to further improve the deployability of individual Guard members, to sharpen the emphasis on unit and leadership training in the National Guard, to strengthen the capability assessments of National Guard units, and to increase the compatibility of active units with Guard units.

To help ensure that Guard and reserve units can indeed be available when we plan for them to be, we will be continuing a number of initiatives and undertaking some new ones to alleviate deficiencies in Guard and reserve training and combat readiness that were identified during the Persian Gulf War.

- **Reserve equipment initiative.** Adequate equipment is a crucial part of readiness. We will formulate our plans and budgets in order to fulfill the reserve components' legitimate equipment needs — in the Army and the other services as well. The Department will develop a balanced program of new procurement and redistribution to provide needed equipment.

- **Full-time support for the Army Reserve.** We are increasing the percentage of full-time support personnel in the Army Reserve component. These personnel perform key support functions — administration, maintenance, and so forth — enabling reserve personnel to focus their limited training time on required military skills.

- **Pre-mobilization preparations.** On strategic warning, several measures can be taken to improve the readiness of combat forces without mobilizing them. These include filling equipment shortfalls, completing school training of all personnel, providing two weeks of drill training per month, and providing a two- to three-week training period after six months.

- **Post-mobilization training.** Currently, only the National Training Center and a few other sites are able to provide post-mobilization training to National Guard

combat brigades, if such training is needed. This limits our ability to call up and train more than a few brigades in a crisis. The Army, recognizing this deficiency, is creating several "readiness divisions" to assist with the training of reserve component units during peacetime and crises. These divisions will contain active Army, Army National Guard, and Army Reserve personnel, and will provide the peacetime and post-mobilization training assistance needed by reserve component combat and support units.

Army Guard and Reserve units must be trained and ready to fight when called to active duty. The initiatives and restructuring we are proposing are designed to ensure that is the case. After these initiatives have been implemented and in place for some time, they will need to be evaluated carefully to determine whether the readiness achieved is satisfactory or further improvements are needed. We will also need to continue to evaluate the reserve component structure against evolving warfighting requirements.

Making the Force More Accessible

As DoD becomes more reliant upon the contributions of the reserve components, ensuring better access to Guard and reserve forces takes on increasing importance. Our concerns span the entire spectrum of needs: wartime contingencies, domestic emergencies, and peacetime operations.

We are examining the adequacy of existing legislation and have submitted a request for two changes to Title 10, USC 673b. We have asked the Congress to amend that provision of law to give us access to the reserve component for 180 days plus an extension of an additional 180 days, versus the 90 + 90 days provided under current law. We have also asked that the Secretary of Defense have the authority to call up 25,000 people if needed to support deployment operations during the early stages of a conflict.

The Department of Defense has formed a Reserve Component Accessibility Steering Group which will identify and develop solutions for a full range of accessibility issues: legislative and regulatory changes; mobilization policy guidance; better ways to use volunteers; and methods to meet domestic mission needs more effectively. In addition, accessibility for domestic missions of National Guard forces could be im-

proved by implementing recent proposals for bilateral and multilateral agreements for cooperation among states.

Our ultimate objective, of course, is to assure the availability of reserve component forces when needed, while ensuring that we do not overextend our call on our citizen-soldiers.

SECTION VII: DEFENSE FOUNDATIONS

INFRASTRUCTURE

Infrastructure is the foundation upon which our military strength is built. It includes all DoD activities other than those directly associated with operational forces, intelligence, strategic defense, and applied research and development.

For example, in FY 1994, infrastructure activities will account for \$160 billion in appropriated and revolving funds, or approximately 59 percent of DoD total obligational authority.

Infrastructure activities fall into seven broad categories:

- **Central Logistics** — includes depot maintenance, supply operations, and transportation. This is the largest functional area.
- **Central Medical** — includes all DoD medical activities except those directly associated with the readiness mission. CHAMPUS and the military medical treatment facilities make up most of this category.
- **Central Personnel** — includes all permanent change-of-station costs, recruiting and advertising

expenditures, dependent support programs, various public relations functions, and assorted other personnel activities.

- **Central Training** — includes only formal training activities, not the larger costs of unit training and exercises.
- **Science and Technology (S&T), DoD Labs, and Acquisition Management** — includes primarily S&T funding and oversight of DoD labs.
- **Installation Support** — includes costs driven by the number and size of DoD installations.
- **Force Management** — includes management headquarters, some defense agencies, and some aspects of command, control, communications, and intelligence (C3I).

As indicated in Figure 13, logistics represents the largest share of infrastructure expenditures, claiming 40 percent of the total, followed by installation support, with a 17 percent share.

Infrastructure Categories (As percentage of \$160 billion in FY 1994 budget)

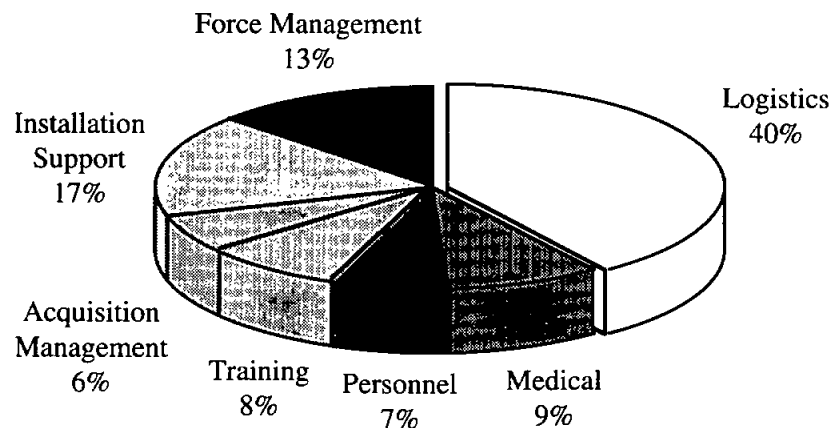


Figure 13

Infrastructure costs fall into two categories: those that are sensitive to changes in the overall force structure and those that are not affected when the size of the force is reduced. Our objective in the Bottom-Up Review was to identify potential savings and to launch a longer-term process of reducing and streamlining DoD's infrastructure without harming readiness.

Approximately 40 percent of infrastructure costs are tied directly to force structure. Examples include training, supply, and transportation costs. We will, of course, realize savings in these areas as our forces are reduced. Further opportunities for savings can be derived from supporting our operational forces more efficiently.

A detailed analysis of cost savings that could be realized as a result of force downsizing alone was conducted as part of the Bottom-Up Review. Since decisions on the final force structure were not available at the time the analysis was performed, a notional force was used. The analysis suggested that DoD should see direct infrastructure savings of between \$10 billion and \$11 billion resulting directly from the force draw-down.

The Bottom-Up Review also examined ways to obtain substantial savings in areas of infrastructure where costs have traditionally been seen as relatively fixed. Savings in these areas will require changing the basic ways in which DoD does business. For example, about 50 percent of infrastructure costs are a product of policy decisions or statutory requirements and can be reduced only through changes in public law or DoD directives. These include elements of funding for military installations, family housing, military base operations, depot maintenance, and schools for DoD dependents, both in the United States and abroad.

One such area of potential savings is the realignment and closure of additional U.S. military bases and facilities. This is accomplished through the BRAC process. Implementation of BRAC-93 decisions is expected to result in a savings of about \$4 billion.

Another 10 percent of infrastructure costs are attributable to public law and policy decisions but are virtually impossible to reduce. Cutting expenditures

here would require extremely difficult and, in some cases, undesirable changes, such as Congressional action to rescind or rewrite U.S. environmental laws. Included in this category are most environmental restoration efforts (which involve myriad legal, regulatory, and policy constraints), various legal entitlements of current and former service members, and the obligation to provide medical benefits to dependents of active-duty personnel.

There are three general methods of reducing variable infrastructure costs. These include increased use of privatization for business operations, additional consolidations and expanded use of executive agents, and better business practices and incentives. There have been many attempts to reduce costs in these areas before, and such efforts must be encouraged and expanded. The potential for savings, however, differs significantly across functional categories.

Privatization of DoD operations can, in selected cases, provide cost savings. Transferring operations to the private sector could yield savings in such areas as maintenance, base operations, and concession functions. There are significant economies of scale that can be realized from consolidating certain functions, such as accounting services, and appointing executive agents for training and depot maintenance. Employing better business practices over a range of DoD activities will enable us to reduce infrastructure costs without cutting outputs.

The Bottom-Up Review has provided a detailed framework of options for reducing infrastructure costs. Just by reducing force size, savings of around \$10 billion to \$11 billion will be realized in the 40 percent of infrastructure costs that are directly tied to our operational force structure. Another \$4 billion in savings will be achieved with the implementation of BRAC-93 decisions. Further cost savings will come from changes in policy directives and, in some cases, public law, as we make adjustments with an eye toward privatization, consolidation of functions, and better business practices. We will pursue the maximum savings possible in each infrastructure category, while maintaining an adequate level and quality of infrastructure to support our forces.

SECTION VII: DEFENSE FOUNDATIONS

ENVIRONMENTAL SECURITY

In the post-Cold War era, DoD's approach to environmental problems must rest on two basic premises. First, our national security must include protection of the environment, and environmental concerns must be fully integrated into our defense policies. Second, to protect our nation we must also have a strong economy; protecting the environment and growing the economy must go hand in hand.

Environmental concerns are an integral part of U.S. national security policy because of the effect that environmental conditions have on economic and political stability, because of the growth in environmental costs as a share of the national security budget, and because of the loss of public trust caused by military noncompliance with environmental laws and regulations.

Reflecting the Clinton Administration's commitment to preserving and protecting the environment, the Department of Defense created a new Environmental Security Program with a mandate to ensure that appropriate environmental, safety, and health considerations are brought to bear in the development of national security policy; that the environment is protected in defense operations; and that our environmental stewardship is used to promote economic growth. This program is being pursued in partnership with other federal agencies, states, private industry, the public, and Congress.

This new program is based on a C³P² (C-cubed, P-squared) foundation, which stands for cleanup, compliance, conservation, and pollution prevention. The Department will establish goals and priorities in each of these areas and will establish measurable ways to demonstrate progress.

Over time, this program should provide DoD with a better environmental security strategy, better information and control systems for effective management, uniform cost-estimating methods within the Depart-

ment, an environmental security technology program directed toward user needs, and increased public involvement in environmental security efforts.

Threats to Environmental Security

The Department's national security mission includes performing defense operations in an environmentally responsible manner, deterring environmental threats that could lead to international instability, and when appropriate, applying military capabilities to mitigate environmental effects of natural disasters.

Environmental security threats are defined as conditions affecting human health, safety, or the environment that actually or potentially (1) impair the ability of DoD to prepare for and perform its national security mission or (2) create instabilities that can threaten U.S. national security.

The most notable environmental threats to U.S. security to which the Department must respond are: **global threats**, such as warming, ozone depletion, loss of biodiversity, and nuclear proliferation; **regional threats**, such as environmental terrorism, accidents or disasters, regional conflicts caused by scarcity or denial of resources, and cross-border and global contamination; and **national threats**, such as risks to public health and the environment from DoD activities, increasing restrictions on military operations, inefficient use of DoD resources, reduced weapon system performance, and erosion of public trust.

Program Objectives

The Bottom-Up Review evaluated each of the Department's environmental security programs in light of the following objectives: **reducing environmental risk** by minimizing threats to human health and safety; **ensuring full compliance** with U.S. environmental laws and regulations and with the Overseas Environ-

mental Baseline Guidance document; *enhancing cost-effectiveness* and reducing costs wherever possible; *targeting environmental technology* on the most serious problems and where research and development will achieve the highest payoffs; *improving U.S. public involvement and awareness* by conducting open, frequent, and meaningful public dialogues and information exchanges; and *producing measurable results* in performance, schedule, and cost. This includes reductions in environmental risks, protection of natural resources, compliance with environmental laws or regulations, and reductions in pollution levels.

New Directions Needed

The Department has stewardship for about 25 million acres of land around the world, and has identified more than 18,000 sites that may need to be cleaned up. Cleanup requirements include: fuels and solvents at about 60 percent of our sites, toxic and hazardous waste at about 30 percent, unexploded bombs and artillery shells at about 8 percent, and low-level nuclear waste at about 2 percent.

Based on its examination of environmental programs, the Bottom-Up Review identified the following objectives for DoD's environmental security strategy:

Cleanup programs must reflect a new "common sense" strategy that relates cleanup standards to planned land use; eliminates contamination "hot spots" and evaluates the balance of contaminated sites for application of environmental technologies; increases public involvement in decisionmaking; and achieves significant economies in the management of cleanup programs. We will complete preliminary assessments at all sites; mitigate contamination at all "hot spots"; consider future land use in developing cleanup strategies; and fully implement the President's "fast track" cleanup program at bases slated for closure.

Compliance programs need to improve our ability to identify, program, and budget for environmental security requirements and evaluate program execution; improve education and training to ensure full compliance; increase partnership efforts with federal

and state regulators and the public to achieve sustained compliance, including creation of regional DoD environmental offices; develop an investment strategy to upgrade the Department's infrastructure; and resolve deficiencies as soon as possible.

Conservation programs need to enable DoD to participate fully in the National Biological Survey and complete resource inventories of all DoD lands and waters; improve ecosystem management and protection of resources; and establish DoD-wide energy and resource conservation guidelines and incentives to reduce energy consumption.

Pollution prevention programs need to ensure that life-cycle environmental security costs and benefits are considered explicitly in acquisition and supply system decisions, and that incentives are provided to reduce sources of pollution and promote more efficient material and energy procurement and use, including reuse, recycling, and creating markets for recycled materials. Specifically, the Department will reduce non-mission-essential use of ozone-depleting substances and reduce toxic releases and the generation of solid and hazardous waste.

Technology development efforts need to meet widespread environmental needs with programs that yield quick results and have high payoffs. In addition, the Department must develop a system to determine technology priorities and eliminate overlapping funding; engage in technology partnerships to stimulate innovative technology development and promote dual use where appropriate; and improve technology transfers within and outside DoD, particularly technologies to characterize and clean up sites.

The Department also needs to redesign its budget preparation and execution tracking procedures for environmental security programs.

The new Environmental Security Program will ensure that both environmental threats and environmental protection are prominent parts of the defense program. Giving these issues the attention they deserve will be vital to our national security and to our economic growth in the years ahead.

SECTION VII: DEFENSE FOUNDATIONS

ACQUISITION REFORM

The Need for Reform

The DoD acquisition system developed and acquired the best weapons and support systems in the world. It was critical to fielding the quality armed forces the United States has today. However, just as we need to reshape our forces from the bottom up in response to the changed security environment, so must we restructure our acquisition system to compensate for the decline in available resources for defense investment and to exploit technological advances in the commercial sector of our economy more effectively.

In addition, certain oversight and regulatory practices that were adopted during the Cold War are no longer affordable or necessary today. The existing DoD acquisition system is based on outdated management philosophies and organizational structures. Our acquisition organization is segmented, overly specialized, and hierarchical. There are so many hand-offs of responsibility for any one acquisition program that accountability is difficult, and the ability of any one person or organization to change the process is small.

The current acquisition system has been shaped by myriad rules, regulations, and laws that were intended to protect the government, ensure fairness, check the government's authority over its suppliers, or further social objectives. However, while these laws and regulations were noble in intent, in practice they have often burdened the acquisition system unnecessarily, adding unnecessary costs to items produced by defense contractors, discouraging commercial contractors from selling to the government, and increasing DoD's management and control costs. Examples include:

- Regulations governing military specifications that were adopted to ensure that products would both meet users' needs and be purchased from the lowest bidder.

- Laws requiring DoD to use small businesses and buy only American-made products, which were enacted to further particular public interests.

- Oversight requirements both within DoD and over DoD contractors that have burgeoned in an effort to eliminate waste, fraud, or abuse of the system.

Today's rules and regulations are barriers to the use of commercial practices, the purchase of commercial products, and the integration of the defense and commercial industrial bases. Any attempt at acquisition reform must take the original intent of current regulations into consideration, but must also find ways to: (1) reassess their viability given expected DoD procurement changes or (2) where appropriate, modify laws and regulations to ensure that they protect the government's interest while fostering more effective and efficient acquisition procedures.

The Path to Reform

The DoD acquisition system should establish reasonable and affordable requirements and provide the most efficient, timely, and effective means of acquiring state-of-the-art goods and services to meet those requirements at the best value to the American taxpayer.

There are two goals that reform of the defense acquisition system can and must achieve immediately in order to succeed in our longer-term reform objectives:

- First, we must adopt commercial practices to the maximum extent possible to make DoD a better customer and to foster the integration of the defense and commercial industrial bases.

- Second, we must more closely link the systems requirements process to the operational plans and needs of the unified commands, as well as to the resource allocation process.

Integrating major parts of the defense industrial base with the commercial industrial base and having DoD adopt the best practices of today's commercial industries is the key to our reforms. We can no longer rely on a large defense industrial base consisting of companies who cater only to the needs of the military; our reduced defense spending will simply not support a separate defense industrial base with many companies largely isolated from the commercial sector.

Integrating the defense and industrial bases and making DoD a better customer will allow us to meet several key objectives:

- **Maintain "leading edge" technology.** In order to stay on the cutting edge of technology, we must look beyond our traditional defense contractors and sub-contractors. Modern weaponry relies heavily on advanced electronics, software, telecommunications, flexible manufacturing techniques, and other advanced technologies where commercial companies are often making the most significant advances.

- **Broaden the industrial base for DoD.** Because the defense-dedicated industrial base will necessarily shrink, it would probably not be sufficient to handle expanded requirements in a large-scale crisis. Broadening the base of potential suppliers will ensure that the United States has the capability to gear up production again should that become necessary.

- **Encourage innovation and reduce acquisition time.** Having a larger base to draw upon and making DoD a better customer will encourage innovation in products and practices, both in government and private industry; allow more flexible solutions to acquisition problems; and reduce the time it takes to acquire products and services.

- **Become more efficient.** A larger base of companies creates more competition, which in turn yields more efficient operations and reduces the time required to acquire products and services. Increased competition also allows the market to set and enforce fair prices. This will allow us to reduce unnecessary infrastructure and oversight still further.

- **Integrate military and commercial advanced technologies.** Integrating the defense and commercial industrial bases means that the results of substantial investments in military-related technologies will be available for exploitation by commercial industry. This will help the U.S. economy.

We also plan to better integrate the unified commanders, those who will actually use the systems, into the process of determining what systems will be acquired. In addition, the overall budget process must be linked more closely with individual acquisition decisions. Such integration will add flexibility, efficiency, and innovation to the acquisition process by encouraging consideration of alternative or substitute systems to meet the needs of weapons users.

An Agenda for Reform

To bring daily attention to these issues, the office of the Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) has been established. This office will be the focal point for all acquisition reform issues and for restructuring the acquisition system. The DUSD(AR) will also chair a Senior DoD Acquisition Reform Steering Group, whose members will make recommendations on acquisition reform goals, principles, and actions.

We have identified the following short-term priority measures as the first steps in what will be a larger reform effort:

- Simplify the acquisition of purchases under \$100,000.

- Remove impediments to the purchase of commercial items and services.
- Develop proposals for pilot programs pursuant to the authority in Section 809 of the National Defense Authorization Act for Fiscal Year 1991 (Public Law 101-510).
- Reaffirm the policy preference for the acquisition of commercial items and the use of functional performance specifications unless a DoD-unique product specification or process is the only practical alternative to ensure that a product or service meets users' needs.
- Repeal outdated and unnecessary service-unique statutes as proposed by the "Section 800" *Acquisition Streamlining Report*.

These priorities, the objectives of the acquisition reform effort, and the strategy for meeting those objectives will continue to develop as DoD works with other organizations conducting related efforts — such as the National Performance Review. In addition, many of these initiatives require coordination with and support from other federal agencies, such as the Department of Labor and the Small Business Administration. We will work with the Office of Federal Procurement Policy, the Office of Management and Budget, and other federal agencies to ensure that acquisition reform initiatives are applied government-wide where appropriate.

The Bottom-Up Review was only the beginning of our efforts to reform the acquisition system. The process does not end here. The DUSD(AR) will soon be unveiling a detailed strategic plan for acquisition reform that builds on the results of the Bottom-Up Review and increases the scope of action.

SECTION VIII

RESOURCES TO IMPLEMENT THE DEFENSE STRATEGY

The Bottom-Up Review's Budgetary Starting Point

The final step in the Bottom-Up Review process was to match resources to the defense strategy, force structure, and modernization programs selected. While the Bottom-Up Review was driven primarily by considerations of what constituted the best defense strategy and policy for America, it obviously could not ignore economic realities. Thus, at the conclusion of the review, we estimated what the recommended program would cost and matched it against President Clinton's direction for reductions.

To establish a baseline for this cost comparison, we began with the Bush defense program and adjusted it to reflect updated economic assumptions, the government-wide federal pay reduction, and the findings of a Defense Science Board task force, led by defense analyst Philip Odeen, which was formed to determine if the Bush Administration's defense program had been properly costed. Those adjustments resulted in a baseline total of \$1,325 billion for the FY 1995-99 FYDP. The Clinton Administration defense budget target for this same period was \$1,221 billion; this was based on the President's April 1993 budget, adjusted to reflect the Odeen Panel's findings. Thus, as shown in Table 1, the difference between the baseline and the fiscal target for the FYDP years is \$104 billion.

**Baseline Versus Clinton
Future Years Defense Program**
(Billions of Dollars in Budget Authority)

	<u>FY95</u>	<u>FY96</u>	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY95-99</u>
Baseline	257	261	264	270	273	1,325
Clinton Budget	<u>249</u>	<u>242</u>	<u>236</u>	<u>244</u>	<u>250</u>	<u>1,221</u>
Reduction	8	19	28	26	23	104

Table 1

Budgetary Impact of the Bottom-Up Review

The results of Bottom-Up Review decisions will become adjustments to the FY 1995-99 baseline (\$1,325 billion) program. The decisions fall into four categories:

- Force structure
- Infrastructure (including base closures)
- Modernization and investment programs
- Initiatives

Force Structure. These changes comprise adjustments to Army, Navy, Air Force, and Marine Corps force structure and end-strength, as compared to the Base Force. The active-duty forces of the Army, Navy, and Air Force will be reduced, while Marine Corps and National Guard and reserve forces are increased. Savings in infrastructure directly related to force structure cuts will also be realized. Finally, provisions have been made for the costs of achieving DoD's environmental security objectives. In total, force structure decisions from the Bottom-Up Review will reduce funding requirements by \$24 billion from the FY 1995-99 baseline.

Infrastructure. Separately from the force structure-derived changes to DoD infrastructure, opportunities for savings and efficiencies were found elsewhere in DoD supporting activities, as discussed in Section VII. For example, savings were identified through reductions in headquarters and cuts in civilian personnel levels, as well as through the realignment and closure of military bases and facilities. Estimated savings in these infrastructure programs total \$19 billion.

Modernization and Investment Programs. This broad category includes the development and procurement of ships, aircraft, and other combat equipment, as well as DoD's Science and Technology and Defense

Reinvestment programs. The realigned ballistic missile defense program will generate savings of approximately \$21 billion during FY 1995-99. Other modernization decisions focus on areas where the Bottom-Up Review determined that savings can be achieved (aircraft carriers, space launch, theater aircraft, military communications satellites, and other programs). There also are some systems in which the Clinton-Aspin strategy requires additional investment (combat helicopters, attack submarines, and the V-22 program). Finally, the Defense Reinvestment program will emphasize technologies of potential "dual use" in the military and civil sectors, assist DoD personnel affected by the restructured defense program, and help communities adjust to closure of nearby military bases. The net effect of these investment program decisions (aside from ballistic missile defense) will be a \$32 billion savings during FY 1995-99.

Initiatives. As discussed in Section VI, new initiatives include cooperative threat reduction; counterproliferation efforts; expanded contacts and cooperation with the states of the former Soviet Union; global initiatives to promote democracy; peacekeeping and peace enforcement operations; and humanitarian assistance. The Bottom-Up Review determined that \$5 billion could prudently be added over FY 1995-99 to pursue these objectives.

Summary of Savings in the FYDP. In total, decisions made in the Bottom-Up Review will achieve an estimated \$91 billion in savings (during FY 1995-99) from the \$1,325 billion baseline program (see Table 2). Relative to the Administration's target reduction of \$104 billion, this is a shortfall of about \$13 billion. This difference is spread across the first four years of the FYDP.

Estimated Resource Changes from the Bottom-Up Review

(Billions of Dollars in Budget Authority)

	FY 1995-99
Force Structure	-24
Infrastructure	-19
BMDO	-21
Other Modernization and Investment	-32
Initiatives	+5
Total Savings	-91

Table 2

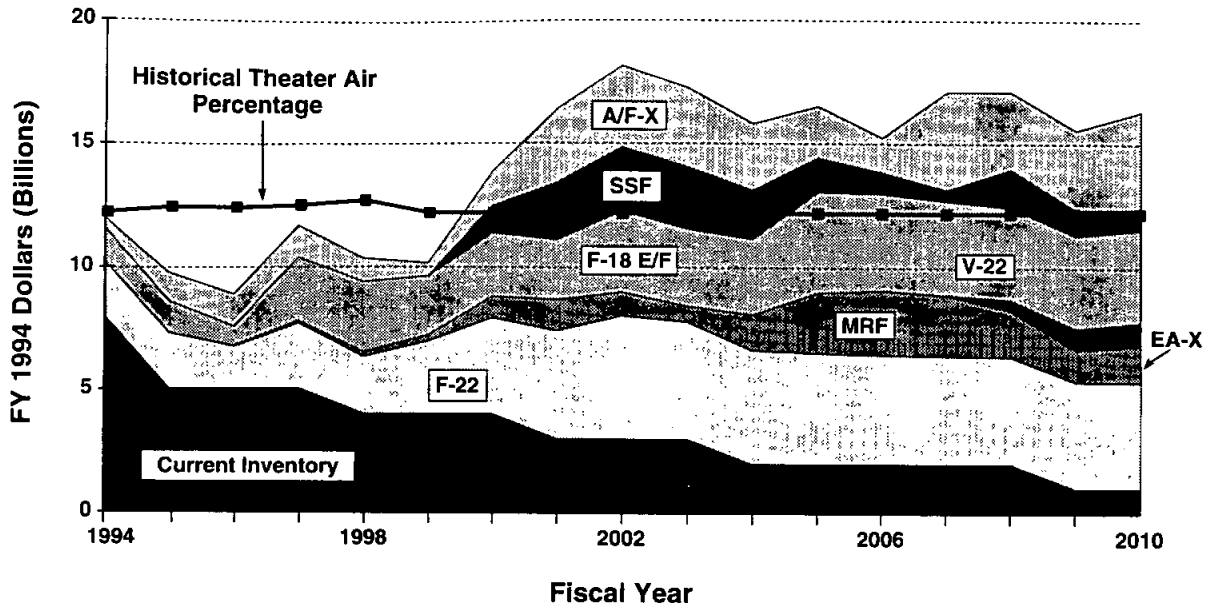
It is important to note that these figures are planning estimates. The Bottom-Up Review developed a strategic framework for defense reductions, not a budget. Throughout the fall, DoD will conduct its normal program and budget review, during which it will identify the additional \$13 billion in reductions needed to meet the President's target. Further savings are likely to come from the following areas:

- **The National Performance Review.** The Vice President's study has many good ideas for better, cheaper government that will be examined by DoD.
- **The FY 1995 Base Closure and Realignment Process.** Savings here may be significant, but would not occur until late in the FYDP.
- **Acquisition Reform.** No savings from acquisition reform were counted in the Bottom-Up Review.
- **Strategic Programs.** We are conducting an extensive review of strategic requirements and programs and are likely to find reductions possible.

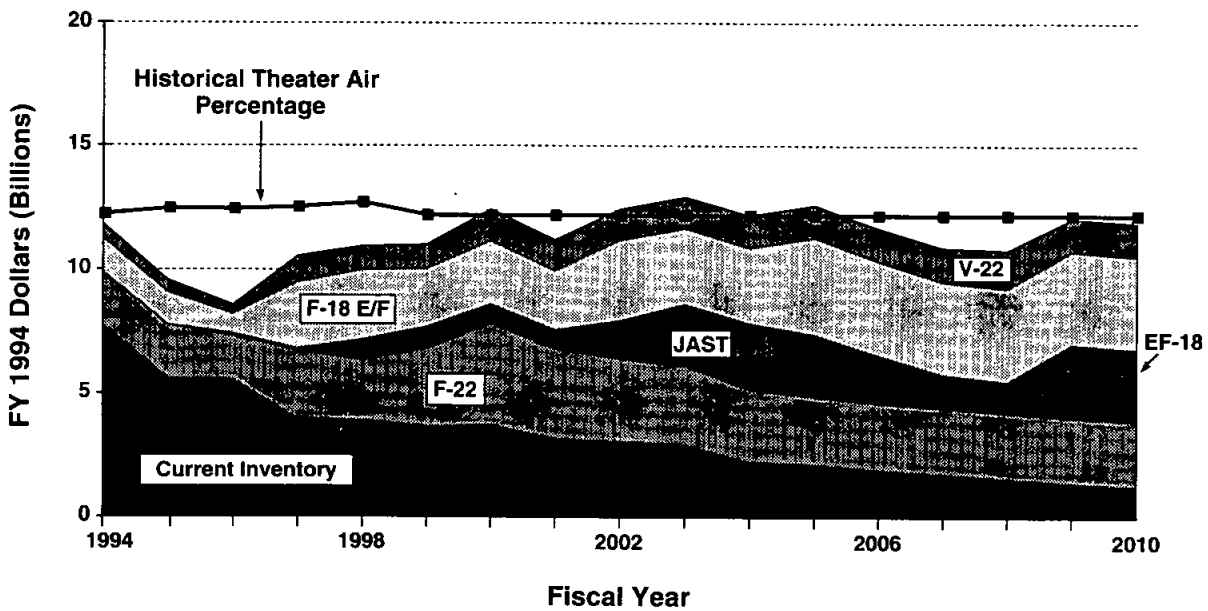
Addressing the "Bow Wave" Problem. As the Bottom-Up Review tracked the impact of its recommendations over the FYDP period, it remained mindful of consequences for defense spending in the year 2000 and beyond. The review was particularly intent on preventing this year's decisions from producing large bills that would have to be paid in future defense budgets.

In most cases, the Bottom-Up Review found that sizing defense programs properly now would prevent "bow wave" problems from occurring later. For example, the previous administration's theater aircraft modernization program called for developing too many new combat aircraft. As shown in Figure 14, these systems would have absorbed a steadily increasing share of investment dollars as they moved into advanced development or procurement early in the next decade. However, as also shown in Figure 14, the new theater aircraft program recommended in the Bottom-Up Review eliminates this "bow wave" while fully funding the V-22 program.

Theater Air Program



Base Force



Bottom-Up Review

Figure 14

NEWS BRIEFING



Office of the Assistant Secretary of Defense
(Public Affairs)

Secretary of Defense Les Aspin
General Colin Powell, Chairman, JCS
Bottom-Up Review
Wednesday, September 1, 1993

Ms. deLaski: Thank you for coming. Thank you for your interest in the Bottom-Up Review. Let me explain how this briefing will proceed.

First of all, Secretary Aspin will make some opening comments, and then General Powell will brief the force structure elements. Then Secretary Aspin will brief the modernization issues. I ask you to hold your questions until after they do those things, then they'll be happy to take your questions.

If it's difficult for some of you to see, which it might be, we have provided a hard copy of the slides so you can follow along. The Xeroxed excerpts that you received today are not the complete Bottom-Up Review. You're getting the briefing, though, pretty much that the President got this week. You'll have the full document probably next week.

Let me make one point, though. As we've said, this is a strategy review, not a budget. We don't have dollar figures today. The savings derived from the Bottom-Up Review will be discussed in conjunction with the Vice President's National Performance Review next week.

With that, I give you Secretary Aspin.

Aspin: Thank you, Kathleen. Let me say good day to all of you, and welcome to our briefing. General Powell and I are here to present to you today the results of the Bottom-Up Review.

The Clinton Administration defense program that we're going to talk about today is based upon tomorrow's requirements. It is a product of a comprehensive, broadly collaborative review based upon the real dangers that face America in the new era. It has produced a lean, mobile, high-tech force ready to protect Americans in this new time. General Powell will talk to you about the force structure that came from the Bottom-Up Review. I'll discuss the modernization.

But before Colin begins, let me talk just a little bit about the process and a little bit of the beginning here. Let me start, first of all, by talking about the foundation for the Bottom-Up Review. Those of you who have been following this topic know that for decades this building has focused almost all of its planning -- budgets, force structures, the way we organize our forces -- everything has been focused against the Soviet threat, even to the extent of the way we designed our weapons. We designed our tanks, our planes, our ships with war with the Soviet Union in mind. We now face a time when...this building is in a brand new era. We face a time when that is gone. There is

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no more Warsaw Pact. There is no more Soviet Union. So how do we size and shape our defense budgets now? How do you know whether you need a \$100 billion defense budget or a \$300 billion or what kind of a defense budget?

The first step, then, in this Bottom-Up Review, was to ask...go to the fundamental question of what do you need a defense for. We began with the question of what are the dangers that face the United States now in the post-Cold War, post-Soviet world? We came up essentially with four of them. Those of you who have been following the debate are familiar with these, but they are the four that are here on this chart. They are a new nuclear threat, proliferation. We have a different nuclear threat. The old nuclear threat was thousands of warheads in the hands of the Soviet Union. The new nuclear threat is a handful of nuclear weapons in the hands of some terrorist organization or terrorist state, perhaps delivered by unconventional means. So the new nuclear threat, that is still a concern in this new era that we enter into. It's not the old threat where it was possible for both sides to begin war and eliminate life in both countries and maybe a big chunk of life on the planet. What we really have now is a wholly different scale, but in a lot of ways a more difficult challenge, a more unpredictable challenge.

The second thing that we decided that was important, that we needed to have a defense establishment to deal with, was regional dangers. Saddam Hussein, Desert Storm, Just Cause with Noriega -- these are the exhibits. There is still in the world today a handful of bad guys who, while they cannot threaten the continental United States in any meaningful way, they can threaten American interests or American allies or American friends. We need a defense establishment to be able to deal with those kinds of threats -- the regional bullies and the regional threats.

Beyond those two, we start to get into a broader area of national security. What we got into was thinking in terms that this building doesn't ordinarily think of as national security. But in the new world, they are national security. One is dangers to democracy. There is a tenuous movement towards democracy in a large number of countries in the world today. If those were to reverse, or if any of them were to reverse, it would produce a different national security situation for the United States. Clearly, it would produce a different level of spending on defense. So whether or not these countries--and we're talking about in the former Soviet Empire and in the developing world--develop as democracies is important to this building and to our national security. So the dangers to democracy is a third--national security to the United States.

The fourth one really is something that we've never really explicitly addressed before, and that's the dangers of a weak economy. In the short run, the national security of the United States is protected by a strong military force. In the long run, the national security of the United States is protected by a strong economy.

So these are the four dangers that we began with, with the Bottom-Up Review. All of the parts of the Bottom-Up Review had to eventually come and relate to the four dangers. This danger, [points to chart] as you will see as we lay it out, this danger, the regional dangers, is the main thing that drove the size of the defense establishment that we're going to present to you today. The first three -- new nukes, regional dangers, and dangers to democracy have driven the shape of the defense establishment that we're going to present to you today. And this one, [points to chart] the dangers of a weak economy, drive the way in which defense business is being conducted by this establishment that we're going to present. How we get that establishment, how we fund that establishment, how

we deal with that establishment is driven by this one [points to chart]. So this is the size, this is the shape, this is the method of operation. That is the fundamental beginnings of the Bottom-Up Review.

Two more points. The Bottom-Up Review process over on the right hand chart there shows all of the things that are involved in the Bottom-Up Review. It covers force structure, it covers modernization, it covers initiatives, things we have not done before. It covers the foundations. It covers everything. We'd like you to understand that this is a very comprehensive review. It will not just cover the few items that we're going to brief in detail here today, but there will be publications and others to follow up on all of this. It's an extensive, comprehensive review. And all of them driven back to the four dangers that we outlined.

Each one of those dots there, for example, those bullets, like theater air, submarines, under the modernization choices; ballistic missile defense, theater air. Each one of those had a working group in the Pentagon. Each one of those had a separate working group that was working on those issues, and there are other working groups that were not listed on the chart there. But it's a very extensive review.

Over here, the chart shows that it was, as the previous statement implies, a collaborative process. These are all of the parts of the building that were involved in this thing. Every one of those working groups had mixed people from various parts of OSD and various parts of the uniformed services -- from the services themselves, from the JCS. It was a very extensive, collaborative effort. This is just the collaboration within the building. When we got the stuff finished within the building -- tentative results -- we would take it across the river. The President and his staff were continually updated as this thing went on. We had a chance to get his ideas, his reaction to things. We'd come back and adjust as it was going on. So they were intimately involved in the process from the beginning -- the White House staff, the President himself was involved in the process.

Let me tell you what we're going to do here today as far as the presentation that Colin and I are going to do. There will then be a followup briefing that will go into some more detail on some of the others. But Colin will cover the force structure options over there, again, looking at the right hand chart. Colin will brief the force structure options, because that's the heart of the matter. That really is the key to the whole thing, is the force structure options that we have to have, that we're laying out here that we need to meet the new dangers.

I will talk about the modernization choices, and out of just necessity, it will be relatively short. I will pick a few of them, and we'll go through others. We will not have a chance much to go into the initiatives and the foundations, but perhaps we'll get a chance to do that at a later point. There will be other chances for you to hear about that and, ultimately we'll be handing out more documents over the next week or so.

Let me, at this point, introduce Colin and let him talk about the force structure options.

General Powell: Thank you, Mr. Secretary.

Let me begin by echoing a point the Secretary made, that this was a very, very collaborative effort. The Joint Chiefs of Staff, the Joint Staff, and the service staffs worked very closely with the new appointees in Mr. Aspin's organization--on his team--and we have been in sync with them step by step throughout this entire, almost seven-month process, and I'm very, very pleased at the level of collaboration that has existed, and I think it will be reflected in the very, very fine product that we are beginning to unveil today.

Let me begin by giving a little bit of a tutorial about what an armed forces is all about. Notwithstanding all of the changes that have taken place in the world, notwithstanding the new emphasis of peacekeeping, peace enforcement, peace engagement, preventive diplomacy, we have a value system and a culture system within the armed forces of the United States. We have this mission -- to fight and win the nation's wars. That's what we do. Why do we do it? For this purpose -- to provide for the common defense. Who do we do it for? We do it for the American people. We never want to lose sight of this ethic. We never want to lose sight of this basic, underlying principle of the armed forces of the United States. We're warriors, and because we are warriors, because we have demonstrated time and time again that we can do this for that purpose for the American people, that's why you have armed forces within the United States structure.

At the same time, because we are able to fight and win the nation's wars, because we are warriors, we are also uniquely able to do some of these other new missions that are coming along -- peacekeeping, humanitarian relief, disaster relief, you name it, we can do it, and we can modify our doctrine, we can modify our strategy, we can modify our structure, our equipment, our training, our leadership techniques, everything else to do these other missions. But we never want to do it in such a way that we lose sight of the focus of why you have armed forces -- to fight and to win the nation's wars.

For most of the last 40 years -- and almost all of my career -- the war that we focused on, that conflict that we were so concerned about, would come out of the Cold War. It was a name we didn't use very often because it was too scary -- it was called World War III. But for almost all of my adult life, I worried, in one way or another, about World War III. The Cold War, World War III was going to be something that engulfed the entire world. As you think back at some of the assumptions we worried about all during the '50s and the '60s and the '70s and the early part of the '80s, about a Soviet Empire here that had tentacles that reached around the world, it was all linked, and this war could begin anywhere. It could begin in the Middle East, it could begin in Northeast Asia. It could, perhaps, begin even in our own continent. But it had a link. It had an empire linkage to it, and we had to plan that we might be in conflict with an empire that had worldwide ambitions, worldwide designs, a worldwide strategy, and the ability to project power around the world. Thus, we worried about the Atlantic Ocean. Just ten years ago, we used to worry about Soviet submarines off the coast of the United States, just off of Norfolk, that could launch missiles that could strike Washington in eight or nine minutes time. We used to worry a great deal about our ability to project power across the north Atlantic Ocean as the Soviet Union's navy was being built up. We used to worry about our ability to defend Central Europe. We used to worry about what we might have to do in the eastern part of Russia as they undertook action against our interests in that part of the world as part of this worldwide conflict. That was the guiding principle, the guiding assumptions relating to this kind of a war for most of the last four decades. That's all now gone.

It's gone, and let me kind of describe what we used to worry about, where it has gone, and what we have to worry about now as a way of segueing into the new strategy and the new force structure.

That Soviet Empire has now been replaced by something quite different -- an Iraq, a Korea, other demons and dangers that come along of a regional nature. They are no longer linked, but they are nevertheless, the source of potential conflict, places where the United States armed forces might have to go and fight and win.

Some of you may remember one of my more forgettable lines, "I'm running out of demons," three years ago. Fortunately, history and central casting has supplied me with new ones along the way. (Laughter) Saddam Hussein, Mr. Aideed, General Malatich. What we've discovered is that that uncertainty we were worrying about a few years ago is still there, and from time to time these dangers come along. They're the dangers that Secretary Aspin was talking about under his second catalog of regional dangers.

You may recall when I became Chairman four years ago, and for many years before that, we used to argue endlessly about how much warning time we had -- whether it would be ten days or 14 days before World War III began in Central Europe. Many of you here in 1989 wrote long articles when we decided to change it from 14 to 21 days -- a major change in strategy at that time. Was it 14 or 21 days? We haven't talked about that in years because, with the collapse of the Warsaw Pact, the collapse of the Soviet Union, we are not talking about regional conflicts that may break out in one day's time, or it might be something that sort of develops over a period of time, and it might take years in terms of this thing coming to a point where United States armed forces might have to get involved. So it requires forces that are able to go instantly and the ability to develop larger forces for a different kind of conflict...in order to relate to this new world and pay the peace dividend that President Clinton has promised to the American people. We can do that, and that's what we're trying to do.

So the world of the Cold War has now gone from this set of assumptions to that set of assumptions, and it really kind of looks a little bit more like this in cartoon fashion.

It seems to us that it is essential that the United States armed forces, in the name of the American people, be prepared to fight and win a major regional conflict in this part of the world -- Southwest Asia. Why? Because we have alliances there, we have vital interests there, the oil of the Western world is located there. It seems to be a sound strategy, based on sound political and military principles that we always have the wherewithal to project power this distance for the purpose of fighting and winning against any regional aggressor who might surface in that region of the world.

Similarly, we think we should be able to do the same thing in Northeast Asia. That one's clearer. North Korea has not changed its stripes -- my one remaining demon that I was hanging on to a few years ago. They have not changed their stripes. Our interest is so great in this part of the world that we should have the ability to do this as well.

We also believe it is sound, wise and prudent, for us to be able to do these two near simultaneously. Why near simultaneously? Why not at the same time? The same time is probably a little too expensive and it's probably unlikely. Since these are no longer linked by the Soviet Empire

and the Cold War, it's most unlikely they would occur at the same time, and it would be very difficult to buy the lift assets necessary to move our forces to both places at the same time. But we think it's wise to have sufficient force to deal with them almost at the same time, near simultaneously, so that we can shift our lift according to how these crises unfold.

Well, is it really likely they would happen at the same time? Probably not. But while we are committed to either one of these, it would be irresponsible, in our judgment, and unwise in our judgment, not to have sufficient capabilities to deal with the second, thereby, perhaps encouraging the very conflict we do not want to see occur. So this is a fundamental, underlying principle of President Clinton and Secretary Aspin and the Joint Chiefs of Staff strategy statement for Bottom-Up Review, being able to deal with two major regional contingencies or conflicts near simultaneously.

At the same time, we have to keep in the back of our mind that while these are the two main events, lots of other things are going on in the world. We can't predict where the conflict might be. We have some difficult situations right now in the area of the former Warsaw Pact and other areas in Central Europe, Bosnia being a prime example. Are we going to get involved in Bosnia? This is a situation that is before us right now as we see what we might have to do in peacekeeping activities -- not necessarily a conflict, but a draw on our forces. A significant commitment of forces, perhaps, to deal with something like that, or elsewhere in Central Europe. We have to keep our attention focused on our own hemisphere.

So two major regional conflicts, be able to deal with them near simultaneously. Also to have sufficient capacity if something else comes along.

That's nice strategy, but then you have to convert that into form and substance and structure. The way we do that is through a series of models and war games and military analyses and discussions with our political leaders as to what is an acceptable risk or an unacceptable risk.

The way we go about it is to take this major regional contingency, Southwest Asia, and take a look at what might happen. In this case we have postulated another attack sometime in the future from Iraq into Kuwait or perhaps into Saudi Arabia. This really is a surrogate. We don't really know if anything like this would ever happen again. We don't know. But there is such instability in this region of the world. There are a number of nations that are arming themselves. There are a number of nations who might not have interests that are favorable toward our friends in the region and toward our interests. So let's use this particular conflict in our modeling and our war games as a surrogate for what might happen in this region.

Let's do the same thing in Northeast Asia, although it's a little clearer as to who that potential enemy might be, and we've been studying him for 40 years. So we use these two scenarios, and we run war games, we use models to make judgments about what kind of forces are necessary to fight and win this battle. To fight and win this battle, what kind of infrastructure is necessary to support it, what kind of lift capacity is required to get your forces there, what kind of reserve is necessary so the nation isn't stripped bare, and all of the other things that go along with it.

The point I want to make with respect to this little cartoon, Country X, is that history teaches us we never really fight where we thought we were going to fight. We fought Desert Storm with a European Army. We used European tactics. Desert Storm was that Cold War battle that

didn't come with trees and mountains. We got a nice desert, and we got a very, very incompetent enemy to work against. But history teaches that the forces you buy, based on these reasonable assessments, might well be used for a conflict you never dreamed of. The force we are buying now, the plans that the Secretary and the President are making now are for a force that will be with us for years to come. It is a force that may well be employed a year from now, three years from now, or long after President Clinton has completed his term of service and Secretary Aspin has completed his. The force we have now, to a large extent, is inherited from our predecessors. We always have to be thinking of the future, the unknown, the uncertain, and I think that's what Secretary Aspin has clearly done in the guidance he has given us for the Bottom-Up Review.

Let me just give you a quick tutorial on how we actually run the models. This part of my chart out here, this shows the two regional contingencies. This out here is a period of strategic warning. We, hopefully, can see a conflict coming out here somewhere and start to do something about it. Maybe we can do something here, when we are quite sure something is about to happen. We can begin deploying forces before a conflict actually begins. When that conflict does begin, the deployment and sustainment of forces takes priority as you go through the phases of the campaign. The first thing you have to do is to halt the invading force.

For example, in Desert Storm we didn't know if the Iraqi army was going to continue through Kuwait and go down into Saudi Arabia. We couldn't be sure. Nobody was willing to bet the farm on that. Answer -- you send in the 82nd Airborne Division, you send in the 1st Tactical Fighter Wing, and you plant the flag of the United States of America in Saudi Arabia. It was a very thin force, many of you will recall, but there was a lot more coming behind it and, at that point, we had planted the flag of the United States of America. We the people were coming to fight and to win eventually.

Then you halt the invading force. Through campaign planning, you build up your forces, you use air power, air power with great precision and skill to attrit away the enemy force. But at the same time, you continue to move forces so that you can eventually seize the initiative away from the enemy, complete the battle, and provide some post-war stability. Post-war stability isn't thought about that much, but it should be. After World War II, post-war stability took the form of occupation armies in Germany and Japan until such time as we could turn it over to newly elected democratic leaders. After Korea, we stayed there, and we're still there. That's post-conflict stability. Now, after Operation Desert Storm, we have forces in the region for post-conflict stability.

We are hoping that these will never occur simultaneously, but we feel that our planning provides the forces necessary to do these if we've got the necessary gap between the two conflicts occurring so that we can use our lift assets to move the forces first to here, then to here, and then sustain them both and get ready for post-conflict stability.

Let me describe now the force options that we examined to see what we needed to deal with the strategic situation I've just put forward to you. Let me begin on the right side of the chart with a force, let's call it the base force. The base force generally had as its underpinning being able to win two nearly simultaneously major regional conflicts and some more capacity beyond that. It consisted, as you well know, of 12 active, eight reserve Army divisions; the 12 carrier battle groups; the Marine Corps component; and the Air Force component that you see here. Pointing out that the Air

Force really is...it gets a little bit of short shrift in this kind of display because it only shows fighter wing equivalents where there is a lot more to the Air Force, the lift capacity of the Air Force, and a lot of other things the Air Force does. It's just a little shorthand of laying out force structure in manageable ways.

The other end of the extreme, we listed the forces we felt through war gaming would be able to deal with one major regional conflict, and we thought eight divisions with six reserve division equivalents as backup so that it could be mobilized and brought on-scene in due course, with only eight carrier battle groups, still a very robust Marine Corps, and a much smaller Air Force, would give us one major regional conflict capability with some left over.

We didn't find this to be an adequate force. We didn't find that this would serve our interests for the reasons that I think I've laid out earlier.

What we then did was to look at two options in the middle, where we came away from the current force projection because of the second revolution that Secretary Aspin talks about frequently -- not only the collapse of the Cold War and the Warsaw Pact, but the total collapse of the Soviet Union; with something of a third revolution as these new regional conflicts have come along. So we can come back from this force level, and we looked at options in here.

The difference between two and three, first of all, force enhancements that I will show you in a moment. These force enhancements give you the ability to erase this hold up here [points to chart]. It gives you the ability to have a readier force that can deploy more rapidly to the two near simultaneous regional conflicts. The other significant change you'll see here is one more, or two more carrier battle groups, and I'll describe that in a moment. But these are driven as much by our force presence needs around the world as they are by our warfighting needs around the world.

The big change [is] anticipated in Army Reserves, particularly the National Guard part of Army Reserves. We usually have looked at that capability in terms of divisions -- National Guard divisions. The combat part of the National Guard. We are going to shift to a focus on enhancing the readiness of brigades rather than enhancing the readiness of entire National Guard divisions. The simple reason is it takes too long. We want to shorten the time by focusing our enhanced readiness activities on brigade-sized organizations. Fifteen is the number we're looking at. We're still examining this number. It's not locked in yet, but the important teaching point here is we're moving from a focus on divisions being ready to a focus on smaller-sized National Guard units being ready.

Let me talk to these force enhancements here [points to chart] so you can see what the difference is between these two options. Additional Army pre-positioned equipment. You're familiar with the Army's heavy brigade we're putting afloat. That allows you to move forces to the area of conflict -- on the left side of that chart I showed you -- during periods of strategic warning without committing yourself. You just move more pre-positioned equipment, an Army heavy brigade, as well as the existing Marine maritime pre-positioned squadrons. Additional airlift and sealift [is] being purchased. We have recently issued the Request for Proposals for new RO/RO ships to be built, as well as to buy existing ones in the commercial market and configure them for military use.

Improved antiarmor and precision-guided munitions for the Air Force and the Navy, so that during that yellow part of my little cartoon earlier, when we were actually interdicting the force, we can do it much more effectively than through the use of ballistically dumb bombs.

More early arriving Navy air. We're going to reconfigure our naval aviation so that, if a carrier is at a point of conflict where it needs additional strike aircraft and fewer air superiority, air defense aircraft, we will bring out additional F-18 squadrons and, ultimately, the F-14 variation. The Tomcat, would replace some of the air superiority fighters aboard the carrier.

We're going to improve Army National Guard combat brigade readiness, and I've touched on that already. Improve Army Guard and Reserve support force readiness.

We're going to do a lot more with command, control, and intelligence assets, in focusing that and being able to provide that to the warfighters. We've got a lot of initiatives underway there.

And, as I'll discuss in a moment, we are going to retain some additional Marine end strength. As you recall, the base force would have taken the Marines down to 159,000. But what we haven't been able to do is get rid of all the requirements that the Marines have and all the commitments that they have. They are busier than they have ever been. So we are going to level that out at 174,000, and I'll describe that in a moment.

That's how you come up with the warfighting structure, but there are other things we have to do. For example, overseas presence. A lot of these folks are part of the warfighting structure, but they serve other purposes as well. You see them here: display U.S. commitment to deter regional aggression just by being in the theater; prevent regional arms races by being there in strength, saying it isn't worth having an arms race with this guy. We will win, and we will fight, and beat you if we have to. Improved coalition effectiveness by our presence, by their learning from us, by their exercising from us, and providing initial response to the regional crisis forces that would be coming over.

In Europe, the President and Secretary Aspin have reaffirmed 100,000 troops will be the number coming down from, remember, 315,000 troops just four years ago. In East Asia, about 98,000 troops, keeping our two brigades in Korea; an Air Force wing in Japan, I think you're familiar with. Southwest Asia, we have roughly 20,000 troops pre-positioned there now. We will also have periodic deployments and exercises with our friends in the region to show this commitment to their welfare. And, of course, our global maritime presence that we have around the world in the form of carriers and other ships, and we're doing some very, very exciting, adaptive force planning so that you see something other than just the traditional large deck carrier battle group. We're making the battle group smaller, and we're doing more creative things and using the unique capabilities of the aircraft carrier.

Of course there are other things we have to do. I think you're familiar with all of these. In the four years that I have been Chairman, as you go through all of these, we've done about two dozen of them. Sometimes they are rather simple, such as moving food supplies to the Soviet Union two winters ago; sometimes they are real tricky such as evacuating the embassy in Mogadishu in 1991, just about the time we were getting ready to start Operation Desert Storm. All of these will

keep coming along, and we have to make sure that we have the capacity to deal with these kinds of unique operations.

Let me use one wonderful chart that you're all going to just love, to sort of summarize. If you can't read it, I think you have a handout. But this kind of gives it to you in a dynamic sense.

Let's start here. This is what the armed forces of the United States are doing today. We are providing overseas presence, Korea, Japan, Europe, Southwest Asia. We're doing democracy activities. You find men and women of the armed forces around the world working with our friends who want to learn from us. One of my great examples is we have an Army chaplain who is working with the Czech republic in helping them put together a chaplain, a religious program for their armed forces, to show them what we do to provide for the spiritual well being of our armed forces. Those types of things will take on greater importance? Why? For the third reason that the Secretary mentioned, to help preserve democracy, to deal with that danger that he talked about a moment ago. Our forces in Europe that are providing forward presence are spending more and more of their time traveling into the nations of the former Warsaw Pact to teach them, to learn from them, to exchange experiences and to help get them to understand the role of the armed forces in a democratic system.

Peacekeeping, such as our hospital in Zagreb, our troops in Macedonia, what we're doing in Somalia which is a combination of peacekeeping as well as some low intensity conflict, being ready for lesser regional contingencies. Humanitarian assistance, disaster relief. Strategic lift. Part of our air fleet is always at work supporting our troops in Mogadishu or flying into Sarajevo.

Then in the United States you have not only the foundation -- our bases, camps stations, training installations, all of that, our depots. You have the general purpose forces ready to respond to the crisis that comes along. And through it all, you have your strategic nuclear deterrents out there because we still do have 28,000 nuclear weapons in the former Soviet Union that we have to eventually deal with.

Along comes the first major regional crisis -- either the East one or the West one. Immediately, we begin to flow forces that are available in the United States. If you remember my cartoon, I moved Europe from the Cold War center out of the picture, put the United States in the center of the picture on that second cartoon, because the whole focus in the future will be less overseas presence, more ability to surge forces out from the United States. So the forces begin to surge.

We also begin to call up reserves. In the total force concept, the reserves are going to be an integral part, even though they are also going to be taken down in size. They will go pretty much from day one as they do now -- part of our total force effort. The whole force begins to flow to deal with major regional contingency one; we call up additional reserves to hedge your bets in case the second one comes. You may have to cut down on some of these other activities. Strategic lift starts to surge, we call up the Ready Reserve Fleet, go to MRC-1 [Major Regional Contingency One]. Then here's your near simultaneity when MRC-2 comes along. We continue to flow.

What you lose here as you go down in size is reserve capacity to deal with anything else that comes along. But the option that I described earlier, the option three that you saw, we believe gives us the ability to handles these two MRC's and have a little bit left over without putting the nation at

any risk. It's an option that the Chiefs are very, very comfortable with, and the Commanders in Chief of the unified command are very comfortable with. You win MRC-0, you then go into post-conflict stability, what we talked about earlier; and then you essentially reposition yourself to get ready for what might come in the future.

This kind of summarizes the sort of philosophy we used in the development of the Bottom-Up Review. We looked at this chart over and over and over again and we debated, what do we need for all these things? How do they link in with the four dangers that the Secretary spoke to? It was kind of our little report card on ourselves throughout the past seven-month period.

What does it all look like when you're finished? Here it is. In FY90, the Army had 18 active divisions and 10 National Guard divisions. As it was coming down to its base force level of 12, it is now at 14 going to six. The plan was six National Guard plus two cadre National Guard divisions. The Bottom-Up Review concludes that we can go to ten active divisions and be able to deal with the situation I described earlier. We put it up here as five National Guard division equivalents, but it's within that five Guard division equivalent that we're talking about the enhanced readiness brigades. How the division headquarters would be used to support those enhanced readiness brigades, we are still discussing and debating.

The Navy, from its high of roughly 15 plus one carriers down to 13, is going to 11 plus one. Eleven full-up active carriers outperforming force presence missions. This 12th carrier will, for the most part, stay off of the East Coast of the United States, be manned at about 80 percent active, 20 percent reserves. It will use reserve training wings to come and go. It can be surged quickly and sent somewhere if need be. That's the beauty of it. We get this 12th carrier at much, much less expense than one of the other 11 carriers.

The overall size of the Navy continues to decline. Remember the first cartoon, the North Atlantic. The North Atlantic is gone. There is no Soviet navy out there that's threatening us. If we had to go back to Europe it might well be with the assistance of the Soviet navy rather than the assistance of the Soviet navy. We can make prudent reductions in the size of the Navy, very significant reductions in the overall size of the Navy, preserving, though, that unique capability that comes with the aircraft carrier. We're looking for more flexible ways to use that unique capability, and that's why I think it is a very sound decision to keep that number fairly robust.

The Air Force will continue to go down to 13 active fighter wings and seven reserve component fighter wings.

The Marine Corps end strength I've already touched on, coming down from its 1990 high of 197 down to 174 -- a significant reduction in the size of the Corps, but because they are so busy in this very calm, new world order we expected, it isn't prudent to take them down any further, and so this is a case where we are holding and building back up from previous decisions.

Strategic nuclear forces. Not much change to the previous plans. This will be the subject of intense review by the Secretary and his staff and the Chiefs in the months and years ahead.

There you have it, there's the force structure associated with the Bottom-Up Review, and I think I've covered adequately the strategy that led to the force structure. I'll turn it back over to the Secretary.

Secretary Aspin: Thank you very much, Colin.

Let me more briefly cover some of the modernization issues here, because this is the next item here. As I say, there are a whole bunch of things here to cover, but under the modernization choices, I'll talk about ballistic missile defense, and then more briefly, theater air, submarines and aircraft carriers. And the rest of it, I'll wait and see if you have any questions on it. But let's start with the ballistic missile defense and where we came out on that issue.

Here is the key considerations for all of the modernization choices that we undertook. These are the factors that went into our decisions as to which choices, the options we looked at, and which ones of the options did we pick. The only thing I would point out to you is the industrial base here. That's new. Previous reviews of modernization issues probably did not give the same weight to the industrial base that we did. So I think that one of the things that I think is important here to point out is that we do give some weight to the industrial base considerations in our choices.

Let's start with the ballistic missile defense program. Here are the problems, as you see, and the alternatives for how to deal with it. Basically what we have is a near-term problem of theater ballistic missile threats to the United States allies, friends, and American forces stationed abroad. That's here and now. That starts from Iraq. That we saw in Desert Storm. That is a near-term threat right here.

A longer-term threat is the threat to the continental United States from intercontinental ballistic missiles. That one depends upon the development of that capability by a whole bunch of countries that are looking at it but do not have that capability now. So there is a need for a theater missile defense right now. There is a need for doing some research, at least, on a national missile defense program.

The other part of it, of course, is that we are in an ABM treaty with the Soviet Union, so whatever option we pick here, whatever combination of things we pick here, it must be consistent with the ABM Treaty.

So there are two ways to proceed. One is the question of how much theater missile defense you get, and the second is the question of what you do with the national missile defense -- all of it consistent with the ABM Treaty. Let me show you a chart that's better than Colin's. I've got some charts that make that thing that Colin put up there look easy. (Laughter) Some of them I'm not going to show you, but there are a couple in here that are really good. This is a nice chart. This is much better than Colin's chart.

What it has here is the theater missile defense on one axis, for you mathematicians, and the national missile defense on the other axis. This is the Y axis, this is the X axis. Do you remember that? (Laughter)

Theater missile defense. In the theater missile defense, we have a core program. All of the options under the theater missile defense have the core program listed here. Then it builds more theater missile defense into the program as you move up. This is a \$9 billion program, \$10 billion program, to \$12, and here's a \$14. So the higher you are on this chart, the more robust theater missile defense program you've got.

On the other hand, you've got a series of options here on the national military missile defense program. You can have two versions of a technology program -- one with Brilliant Eyes, one without it; you can have a tech demonstration program which would be more expensive; and then you've got acquisition program options which are even more expensive yet.

The bottom line is, you can pick a number in there. Or pick one of these boxes is what the Bottom-Up Review had to do, pick somewhere in the boxes. Basically, the philosophy I think we came to was that the right place to be is up in here; with a more robust theater missile defense, but a fairly research-oriented national missile defense. The option we picked was that one.

The program that we picked is the box there. It's the selected program. It emphasizes theater missile defense development and deployment. It's very robust, it's got that whole core program plus a good chunk of the other stuff in the theater missile defense. It focuses on national military, on technology development, is the \$3 billion program with Brilliant Eyes. Here, it's a \$12 billion theater missile development and \$3 billion national missile... plus a \$3 billion overhead, it's an \$18 billion program. It complies with the ABM Treaty, and it reduces the ballistic missile defense budget by \$21 billion because it compares with the current [one] in the base force, in the Bush budget, the FY95 to 99 budget, the \$39 billion. This is an \$18 billion option. You can pick others. You could pick a \$15 or a \$20 or a \$23 or a \$25. What this shows is, it shows you in more detail than I'm going to on the others, but if you're interested in it, what we looked at, what kind of choices we were looking at, what considerations drove us to what we wanted to do. Anyway, what we picked was the one that is \$12 billion over the five-year period of a theater missile defense program, and a \$3 billion national missile defense program.

Let me then go on. We will not go into that kind of detail on the other programs, but I'd just like to go, very briefly, in terms of the theater air and the attack submarines and the aircraft carriers just briefly, and then, if you've got questions, we can go to those on the other weapons.

Let's look at the theater air. The problem with the theater air is to define the theater air capability, here it is, and here's the problems. The current program has these kind of problems associated with it. The question is what are we going to do and what did we come up with. I won't go through the same discussion of the analysis, but let me just jump to the bottom line here of the option that we picked. Here is the option that we picked. Those of you who have the pieces of paper in front of you can take it and look at it. I'd just like to call attention to a couple of issues here on the options that we picked.

The first thing about these options that we picked is that we concentrated very heavily on the near term problems, the problems that are most acute right now. So point number one, we're focusing very carefully on the near term problems.

Second, I'd like to point out this line here -- the joint advance strike technology program. We are looking towards developing the commonality in the next fighter that we will develop, between the Air Force and the Navy. All of us in the Pentagon -- in the uniformed services and in the civilian -- have been in the Pentagon before, and we know the anguish that that produces. And indeed, the whole McNamara TFX fight of the past.

What we tried to do is to take a different approach to this, and this really is a unique attempt to solve the problem. What we are doing is seeing if we can't get components which we can make common to the two planes, to the Navy plane and the Air Force plane. Try and make components common. Where most of the money is in the components -- the avionics, the engine, what have you. Try and make them common, even though the silhouette of the plane may look differently. So you drive the commonality in driving at the commonality of components. That's the approach -- to try and save money by maybe getting 70, 80 percent of the components of the Air Force plane and the Navy plane common. We'll save a lot of money even though, as I say, the silhouette may look differently, and the silhouette may be very important for the Navy's purpose of flying it off of a carrier or whatever. This is a fairly brand new approach, a very interesting approach.

Two more things to point out before we leave this. One is that we're going big time into making the nuclear bomber force, the B-1 and the B-2, conventional capable. Wholly refocusing where we're going with those bomber programs, and to make them part of this theater air solution, is going to be to take the strategic assets from the old Cold War nuclear scenarios to see whether we can make them into silver bullets, use them as silver bullets or whatever in terms of dealing with theater air.

Finally, to focus not just on the platforms, but on the standoff weapons that come off of the platforms. In other words, some of these platforms we're not going to change as fast as we would like to have them changed. To keep the capability there and to have the capability to deal with these deep targets off of the carrier, we're going to have to improve the standoff weapons. So there are two ways to deal with it. One is to deal with the weapons, the other is to deal with the platforms. In cases where, because for one reason or another we can't deal with the platforms, or at least certainly not right away, we're looking at dealing with the problems with the standoff weapons. That's theater air.

Let me do the submarine program. The issue of the submarines is, of course, essentially at its core an industrial base issue. The fact of the matter is that we're not going to need the same number of submarines in the future -- maybe down to half the number of submarines. We have 81 submarines in the inventory now. In the long run we're looking at maybe in the range of 45 to 50 submarines. What that means is that you just don't have to build a submarine for awhile. What happens to the industrial base in the period in which you would not be building submarines?

So these are the questions. The alternatives here are two. We can shut down the program and then restart it when you need to build it -- there would be a gap then. You've got a gap when you don't need to build submarines. You can shut something down and then start it up again. Or you can put something in the middle in there and bridge the production between where we are now on submarines and building the new submarines that we will build.

What we have done is we have decided to do the bridge option. We have planned to complete a third submarine, a third Seawolf at Groton, Connecticut. That maintains the two nuclear-capable shipyards. It also would be...the other part of it is, of course, to develop and build a new attack submarine which would be part of the next generation of submarines. Again, I've just listed the problem and listed the solution that we picked without going into the analysis. If you're interested in the analysis, we can go into that.

Here's my other chart which is pretty good. What it talks about is, Colin pointed out each, the number of carriers that we're going to buy. The point that this chart makes is that the number of carriers that you want is a combination of the two MRC's, the fighting of the two MRC's, but also the function of presence. In other words, you need aircraft carriers to fight and win two MRC's -- major regional contingencies -- as Colin was explaining in his presentation.

How many carriers do you need to do that? What we looked at and what we came up with was, frankly, a number like 10 would probably do it. But the number of carriers that you need to fight and win two nearly simultaneous MRC's -- an MRC West, an MRC East -- ten is probably a number that would work for you. But there's a second consideration. That is a consideration of carriers for presence in peacetime. As Colin also pointed out in his part of the presentation, that's a very important part of the use of carriers, is to show the flag, to be able to project power, to be able to get power, aircraft power to places where we don't have access to airfields. It's an important part of our present strategy.

With the demise of the Soviet Union, what we have discovered is that the presence requirements drives the number of aircraft carriers more than the major regional contingencies. If you had just major regional contingencies, you would probably buy ten aircraft carriers. If you are looking at the need for presence, it's one that makes attractive having more than ten aircraft carriers. This shows you the numbers down here at the bottom.

If, for example, you had ten aircraft carriers, what it shows is that you have... You have three regions of the world -- the Med, the Indian Ocean, and the Pacific -- that you need aircraft carriers present. With ten aircraft carriers in the current kinds of ways they get deployed and the time on station, et cetera, you would have full, 100 percent presence at one of the three places, but half, six months out of the year, 50 percent of the time it would not be covered in the other two. If you get up to 11, you would have 12 months of the year coverage in one out of the three, and eight months coverage in the other two. If you get up to 12 you do a little bit better than that. Those are the numbers.

Looking at all of this, looking at that plus the dollars and all of the other things, we came to the conclusion that Colin had in his force structure presentation, to have an 11 carrier force with a reserve carrier as the 12th carrier which is essentially a training carrier, but it does give you a little bit of presence in time of an emergency, and maybe even a little war fighting in time of an emergency.

That's essentially the modernization choices. There are more than are listed here. We shouldn't go through the whole proposition here, but there will be ample opportunity to ask us or ask [deleted and Admiral deleted], who are going to be available to talk to you, and we'll have more that we're going to put out.

Just to talk very briefly about the rest of it, you've got the initiatives [points to chart]. You don't want to spend any time, but here are the initiatives. These will add money to the defense budget, but this is the new world, this is doing something about democracy, the concern about the reversal of reform and the economic security issues. These are wrapped in this part of the program. I won't spend the time to go through it, but that's where these are. As you know, this building has been very much involved in a whole bunch of those issues.

The foundations are important.

The readiness, as you all know, is one of the things that we are very, very anxious to maintain and to maintain the quality of the readiness, and that, of course, means money. There's two ways that you can get some money out of the foundations, and one of them is extraordinarily important. And that is that we continue to downsize the overhead -- the infrastructure, the bases -- that as the forces go down, we not get top-heavy on the infrastructure. It's incredibly important. It's very tough to do. It's a very difficult part of this thing, but this is absolutely critical.

Reforming the defense acquisition process, more about that from this building, Bill Perry and others, later. But this is also a very important part of the overall problem. Again, just to show you the comprehensiveness of the exercise.

Finally, let me do this. This is the bottom-up review. What does it change? It's the chart that tells you how this is different from what was scheduled before, what was different from the base force. The red stuff are reductions, the green stuff is additions. And I'd just let you look at it. You all got a copy of the chart in the handout. It is essentially at the core of the bottom-line difference. When you look at everything that we have done with this bottom-up review and then just take it over and set it alongside the base force, these are the differences that come out [points to chart].

And as Colin was explaining, the base force was kind of a transitional budget. It was put together in a different era. It was put together after the Warsaw Pact had collapsed but while the Soviet Union was still a major threat, and so of course it's going to look differently than this. I mean they still were looking very much at the possibility of going to war with the Soviet Union. We think that Soviet Union now, thanks to a few more years of looking at it... There are certain circumstances under which Russia could become a major regional threat, but it's hard to see how that Humpty Dumpty called the Soviet Union ever gets put back together. And that changes everything. That does change everything. And it allows us to make the kinds of changes that you see in these two charts.

Let me put this over here, and we'll finish just with the quote that Bill Clinton had said in 1993: "The men and women who serve under the American flag will be the best trained, best equipped, best prepared fighting force in the world so long as I am president." And we have taken that to heart. That is exactly what we had in mind, exactly what we were dealing with when we did this.

Thank you all very much, and let's -- Colin, do you want to come up and we'll answer some questions.

Q: Mr. Secretary, President Clinton, you and the administration have made much of the defense industrial base. You touched on it briefly here. The previous administration went under the theory that if you cut arms programs or hurt industries that it would seek its own level, that jobs would be repaired. The only concrete example that I can see here is the fact that you're building an extra billion-dollar Sea Wolf submarine, which you, as a member of Congress, many other congressmen and even people in this building questioned the need for. Could you go a little bit into about how you're going to maintain this artificial industrial base, if you would, at high cost to the taxpayers in order to...

SEC. ASPIN: Let me tell you a little bit more about the industrial base because it goes beyond the issue of the Sea Wolf submarine.

I think that what we are talking about here in the industrial base is the relationship between the US defense budget and the US economy and what role we can play in both promoting an economy and in strengthening the defense of the future. And let me give you some examples.

The industrial base...as we downsize the defense budgets of the United States, we're going to free up some resources. When you free up those resources, the question is what do you do with them? This administration, the Clinton administration, is going to be much more proactive, much more aggressive about finding ways to employ those resources in commercial products. We've got a big deal going on base closings and other things, so we have a big program for it. The previous administration was a little more laid back about being aggressive about doing that, under the grounds that eventually these things would find their own employment et cetera. So one difference between us on this industrial base issue is to be more aggressive about employing the resources that are freed up.

Secondly, we are much more concerned, as you say, about the ability to produce weapon systems in the future. In other words, what kind of a base are we doing as we go through this downsizing?

And going through the period of the downsizing is the most difficult, because once you hit a constant base, you'll be all right because you'll be able to build a certain number of ships and tanks and planes on a regular schedule. You'll be able to do some work. It's getting from here to there, where you're not buying anything. Because, if you start out with 81 submarines and you're heading for 45, well, the first thing is that you're always above what you need and you're -- and the submarine fleet keeps getting younger because you keep taking out the older ones. So it'll be a long time before you build a submarine -- you need to build a submarine.

We are concerned about whether there are some critical technologies that will be lost when you run into those kind of gaps. And as you rightly point out, the submarine is one example.

Q: Do you have any idea how much this is going to cost? If you will, again, artificially maintain this base --

SEC. ASPIN: Yeah, it's -- what it means is that it's about a \$1.8 billion cost and you get a submarine out of the deal.

Q: But I'm talking about in other programs, too. Won't we have any idea of what the overall cost --

SEC. ASPIN: This -- no. This is the big one. There's nothing else like this.

Q: But what about aircraft carriers (inaudible) maintaining the aircraft carrier industrial base? I assume you've developed CVN-76?

Q: And are you essentially creating an industrial policy with the --

SEC. ASPIN: Not one that would be applied nationwide. I mean, we're talking about a policy which is essentially focused on the defense budgets.

Let me just -- there's one other part to Charlie's question that relates to what you're asking. That is the question -- and it has to do with this industrial policy or the interaction between defense and economics -- and that is that one of the things we'd like to do is to make the US economy create more jobs, be more competitive internationally. And the question is, is there some role that the Defense Department can plan in that? The answer is yes. The Defense Department, in its R&D budget, is amazingly able to invent new technologies. We are also the best country in the world to take that technology and weaponize it as the experts say, turn it into effective weapons, highly-accurate weapons.

So we develop R&D breakthroughs, and then we weaponize it. But what has been happening in the world is that other countries have been taking our R&D and commercializing it. It's a long list -- the fax machine, VCRs -- it's a long list of products that have been developed by the United States and principally by the US military for military uses and have been commercialized by some other country. Part of what we have going here is an attempt to make it easier for American companies to commercialize the spin-offs of our military R&D. That's where you create jobs. That's where you create high-tech jobs. That's where you create high-paying, high-wage jobs, is to get these R&D products that are developed for military uses and figure out how to install them in the commercial market. So that's the third part of this three-part program.

But as I say, it's an industrial policy that relates to defense. We have not thought in terms of doing behind defense.

Q: Mr. Secretary, it seems that your transition from "win, hold, win" to win two nearly simultaneous regional conflicts is more political rhetoric than it is substance, because you actually go -- you have fewer forces to do it. You have one less army National Guard division. You have one extra carrier, but you can't deploy it because you have one fewer carrier air wing. I mean -- and you're -- and timing of when you redeploy to the second contingency is an open-ended thing. So it's basically "win, hold, win" by a different name.

SEC. ASPIN: No. Not true, but let Colin explain. (Laughter.)

Q: You're a short-timer. You can do it. (Laughter.)

GEN. POWELL: I don't think that's an accurate assessment. The carrier you're talking about can be surged. It can pick up maybe a reserve air wing, or it could pick up an active air wing that happens to be in the continental United States at the time working up for another carrier deployment. So there's flexibility with respect to that.

Obviously, as a conservative military officer, I always like to have more, but looking at this strategy carefully with the chiefs and with the Joint Staff and running a lot of war games and examining the changes that have taken place in the world, we are comfortable that we can move from our previous plan down to this new level that came out of the bottom-up review and still be able to, at an acceptable level, give us the ability to deal with these two major regional conflicts near simultaneously.

The real constraint is lift, getting to them, depending on how separated they are in time. I can't help you with how separated they are in time, because that's the uncertainty we deal with. I hope that they remain separated in time forever. The best guarantee of that happening is to make

sure that you show that second regional potential aggressor that you have the capability to get there near simultaneously to deal with that conflict.

So I don't think it is a political statement at all. I think that the force structure we have arrived at is a solid one. It is clearly linked to the political objectives that the president and the secretary have laid down to us. It is achievable with the dollars that I suspect will be available to the department. And I think it's a good, sound military strategy.

SEC. ASPIN: Let me just finish up on that question that Otto asked. The basic difference between "win, hold, win" and "win-win" is not in the force structure, as you've noticed. The force structure essentially looks like the same for both of them. The key is how fast can you get something in there, and the obvious answer to moving from "win, hold, win" to "win-win" is to get more lift. A problem is that in the short run you can't get more lift. I mean, you know, there's a certain time limit to get the more lift. Plus, we have problems with one of the key elements of this lift, which is the C-17.

So the question then is, is there some other way, other than lift, to get more capability into the theater there earlier which would be the equivalent of more lift? And the answer was that chart that Colin had on the enhancements. And it is things like pre-positioning. It is things like having another carrier which allows you to get carrier air support in there earlier. It is things like having these new weapons and a capability to stop the invading army through airpower. It's a whole series of enhancements that you're looking at that substitute for the lift.

But basically the number of forces that you have to fight both of these wars is not different. I mean, it's a two MRC scenario in either case. The question of whether you can get them there and what you can get there early is the key, and that's what changes a "win, hold, win" strategy into a "win-win" strategy.

Q: Mr. Secretary?

SEC. ASPIN: Yes, sir?

Q: A two-part question, if I may -- one, force structure, and the other -- well, since you're the boss, maybe you can handle both. Supposing you have more than two contingencies with -- given the world the way it is, it's possible. The other question really comes under the category of what I would call the "emperor's new clothes." I mean, as you consider gaming at the war colleges, it would seem to me that you're going to cut forces anyway at the end of the Cold War. Four divisions would seem fairly obvious along with the air wings and others. And if this is a comprehensive, extensive review, and I think gaming could accomplish the missions for two of these in a relatively short time, my bottom-line question to you is what's really new?

SEC. ASPIN: A lot of things are new. The focus of this effort is towards two regional contingencies, which is very different from the base force. I mean, the base force --

Q: Suppose you have more than two.

SEC. ASPIN: Well, I mean, let's get to that question second. But if you look at the layout of what we're trying to do here, we've got some initiatives in this bill that you would not have had before. You've got dealing explicitly with two MRCs, and you've got identified the possible bad guys that you may need to deal with with the MRCs. What you've got is, of course, is force structure which is smaller than what we had before, but we've got a force structure which in some cases has got more, as the chairman pointed out with the Marines. It is a force...a defense budget which has changed its focus from one threat -- Soviet Union/Warsaw Pact -- to a new world of a whole new

of threats. And that shapes the budget, and that is what shapes it. That's what's new. It's fundamental propositions.

We then go through and see how many...what we've got to work with. We're going to need resources, as we will see, in terms of R&D. We're going to need some capabilities that we don't have. This drives you to consideration that there are certain kinds of capabilities that we don't have in our inventory. But what you've got in the first instance is a set of weapons systems and a structure that was designed for a different purpose.

Now we look at what we need for this new purpose we find that some of it we don't need, so we're discarding some of those weapons -- some of those aircraft that we had. We find that some of the things that we need, we have; we can still use exactly the way they were designed. Great. Some of the things that we had we can use but we have to redesign them for something else. The B-2, instead of being a nuclear bomber, will be a silver bullet kind of conventional bomber. The B-117 was at the outset of the war. We find that there are certain capabilities that we wish we had in this new world that we don't have because we never had the R&D program for it because we were thinking in terms of the Warsaw Pact and the Soviet Union. We're going to have to get an R&D program to develop that.

The other part of the question? Two or more?

C. ASPIN: Two or more.

I mean, you -- the whole contingency is for two. How did you arrive at the magic two? What about if it's three, four or half a dozen?

J. POWELL: Pick a number, and I'll try to give you a force structure associated with that. But our best assessment was that these two areas of the world pointed out for major contingencies are the two most likely, and the two that would be absolutely devastating to our interests. We would have to do something about them. So, as a minimum, we have to be able to deal with these two.

Now, if others come along, we may have to use the force -- remember my chart that said the force that actually comes along may have to use the forces we prepared for these two. If they all start coming simultaneously, it starts to look like World War III and the Cold War again and -- you have to build your force back up.

We can't be sure that, at some point in the future, the world starts to look different and it starts to be a buildup. But our best projection right now of what the world is liable to look like is that this is a pretty sound analysis of what we have to be able to do and the structure that we've designed will allow us to do that.

This is a two-part question. Number one, which of your future opponents -- theoretical -- justifies the need for even 45 to 50 attack submarines and 18 boomers? That's part one, number two, in projecting ahead as to future opponents, did you foresee them making any doctrinal changes or developing with the possible exception of the occasional -- the small number of nuclear weapons -- but did you see them developing any new type of threat that would be qualitatively different from the Iraq that this country demolished in 1990, '91?

C. ASPIN: Well, let me ask Colin to address the second one. In terms of the submarine force that we looked at was a number of -- there are a number of different ways of using submarines beyond the traditional use of submarines which are going to be looked at and which have been suggested and we're taking a look at. That's why we say we're looking at a number between 45

and 55. For the purposes of this five-year defense budget, we're going to have a 55 force anyway. I mean, you don't come down that fast. We have time to look at this question. It may turn out that 45 is too many, but I think that we're going to continue to look at that and to look at the question of what does it mean for submarines now in this world, what kind of thing it is.

The 18 -- as you say, the nuclear-carrying -- the Trident-carrying submarines -- that's a wholly different thing. That's being driven at this point essentially by START I and START II considerations, and we're looking -- we will be -- when we finish this bottom-up review, the presentation of it and getting it incorporated in the next round of POMs, we will go back and look at the strategic forces. We did not look at the strategic forces very heavily here because they were driven by the START I agreement and the START II agreement and those numbers were kind of fixed in the short run. So we saw no chance to influence those, except later.

Colin, do you want to talk about the --

GEN. POWELL: With respect to -- I might add a point on submarines. We found the other capabilities of submarines particularly useful -- the ability to fire Tomahawks. And so I think there is a continuing role for our submarines. I might point out that there have been a proliferation to some extent of diesel submarines around the world, sort of a weapon of cheap choice. You may notice there are now some submarines prowling the Persian Gulf which do not belong to us or any of our friends. So I think there's a continuing role for the submarine.

And your question with respect to is there anyone else around that rises to the level, say, of what we thought the Iraqi looked like in '90 and '91 we're able to deal with --

Q: (inaudible) projected a more thoughtful or crafty foe?

GEN. POWELL: Well, I don't know. I hope -- at the moment I don't see one. I hope it stays that way, but I will never recommend to any of my civilian leaders that we should, therefore, reduce the quality of our forces or the sophistication of our forces to the lowest common denominator. The reason we were so successful is we, in Desert Storm, made that investment in quality and high technology. We also have to, I think, be very sensitive to some of the developments we see around the world with respect to accuracy of chief weapons. The information revolution is, perhaps, making it possible for some of these Third World countries to develop capabilities quite rapidly that might look rather sophisticated in a few years.

SEC. ASPIN: Last one.

Q: Mr. Secretary?

SEC. ASPIN: There's other people who will be here to ask questions, so we're not the only guys you can talk to. Go ahead.

Q: Back to industrial policy. On military infrastructure and support --

SEC. ASPIN: Before we do that -- Bob, on your question, who else might do it, the other possible -- I mean, the other capable, I would think, out there would be a reversal of reform in Russia as a potential. Where would there be a real challenge. Not just -- you're saying not just a challenge in manpower and in tanks, but a challenge in new technology and new capability. You know, no, it's not likely to come from the Iraqs of the world, but it...and, you know, maybe two or three years from now we'll feel more comfortable about being able to predict for certain the future of Russia.

Go ahead, Tom.

Q: On military infrastructure and support, we have this enormous tail out there, and you seem to have looked at it and come out with the same conclusion as the roles and missions, which is, "Gee, somebody should do something about all that." My question is, what are you going to do about it, or are you just going to leave it to the BRAC?

SEC. ASPIN: In terms of which, the...

Q: The giant military infrastructure, the support services, all the tail.

SEC. ASPIN: Well, yeah, it's a long story, and it's not completely worked out yet. But it is something that we will take it very, very seriously. The whole infrastructure problem is being given

I'll tell you what. When [deleted] comes here in a little while, you ask old [deleted].
(Laughter.) Yeah.

GEN. POWELL: Can I --

SEC. ASPIN: Go ahead. Go ahead. Sure.

GEN. POWELL: I wish we didn't have to just leave it to the BRAC, but the BRAC is the process that the Congress established so we could look at drawing down our bases and our depot structure in a sensible way. So we get a bite at the apple every couple of years. And we have taken a big bite of the apple in '93. I suspect the Secretary will have to take another big bite of the apple in '95.

SEC. ASPIN: Bigger. Bigger.

GEN. POWELL: But the department is trapped to some extent by the political reality of infrastructure drawdown and base closures.

Q: Well, General Cairns, in the Air Force, had an entirely different approach, which was to downsize the depots through contract by contract, and you seem to have rejected that approach.

SEC. ASPIN: Well, I mean, not totally. We'll look at that. This is important, and the only thing to say is that we started with the items that you see before us. The last thing we got to there was the foundations, and the infrastructure's in there. That is absolutely critical. Also critical is establishing some kind of benchmarks, some kind of incentives. I mean, we're talking about a major attempt to figure out how to do that, and we'll be back to you.

Should we give Charlie Cordrey one last...

Q: Thank you, sir.

SEC. ASPIN: In honor for his age and decrepitness? (Laughter.)

Q: The question is for General Powell. When Congressman Aspin said that the base force did not take account of a post-Soviet situation, you described him as mistaken in a television program.

SEC. ASPIN: That's nicer than how he described me, though.

Q: General, briefly, what changed your mind? But specifically, how much additional risk do these top-down cuts impose on the defense establishment?

GEN. POWELL: I don't think they pose any additional risk.

Q: You mean there's no difference between ten divisions and 14?

GEN. POWELL: Of course there is. Of course there is. You know, I could make an argument that we probably -- you know, I could make an argument that maybe you want to stay at 18 until this period of uncertainty is completed. But that really wasn't in the cards. It wasn't an argument I could reasonably make.

In 1990 and '91 and into '92, when we were developing and presenting the base force, we presented it as a force that looked to us as a prudent force to go down to in light of what we saw at that time. It was controversial. There were those who thought we were going too fast, those who thought we were going too slow. And you remember all of those battles, Charles.

Your colleague and friend, Secretary Aspin, now my boss, he wins the debates now. He didn't always win the debates. (Laughter.) But we had great fun and a lot of excitement debating that issue. The Secretary pointed out at that time that he didn't believe we took fully into account the total collapse of the Soviet Union in December of 1991. The point we made back at the time is that we had anticipated a fundamental change in the nature of the Soviet Union, and I think that's a true statement, but we didn't predict its absolute collapse the way it happened.

The Secretary and I have also discussed that even since those days of intense debate, we've seen something of a third revolution. I mean, nobody quite thought we would see Eastern Europe looking the way Eastern Europe is looking today. Nobody back then thought of a Somalia, and this was really with the background of Desert Storm. So with a little more time passing, with another review of the strategy, I think the base force served its purpose as a transitional concept coming out of the Cold War period, and as Secretary Aspin testified, if I may, Mr. Secretary -- when we were testifying on the budget earlier, he said what we're now doing in the bottom-up review is kind of the -- like the successor to the base force, and builds on some of the work we did during the base force because the strategy underpinning is quite similar, and it ought to be quite similar because the world looks the same to us, whether you were wearing base force eyes or bottom-up review eyes. You have those two major regional contingencies that it is prudent for us to be able to deal with:

So I'm very comfortable with where we are, as are all my colleagues on the Joint Chiefs of Staff, as are the commanders of the unified commands who will have to go out and fight these conflicts.

SEC. ASPIN: And the other thing, Charlie, is the -- I mean, the lift study that you guys [JCS] did. They began a lift study and a few other studies under the base force which is absolutely critical. I mean, we just -- it's been tremendously helpful in putting together the bottom-up review. That actually laid out exactly what we need to have here.

So a lot of that work was done that we've been building on -- a lot of the work under the base force we've been building on here.

Thank you all very much. Thank you.

(end)



THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

3 SEP 1993

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
COMPTROLLER, DOD
DIRECTOR OPERATIONAL TEST AND EVALUATION
DIRECTORS OF THE DEFENSE AGENCIES

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SUBJECT: Fiscal Year 1995-99 Program/Budget Development

The Bottom-Up Review has provided us with a sound military strategy and planning baseline for the Clinton Administration's initial Future Years Defense Program (FYDP). This memorandum outlines the procedures that we will follow during the program review that will continue this process. Our fundamental objective remains the same: to provide "forces ready to fight" in the new strategic context.

We will proceed according to the attached schedule. For the tightly compressed program review phase, we will operate largely as we did during the Bottom-Up Review. To this end, I am establishing two new entities: the Program Review Group and the Defense Resources Board.

The Program Review Group will perform in the same role as the Bottom-Up Review Steering Group in identifying major issues, analyzing them, and developing decision options. I am asking the Under Secretary of Defense (Acquisition) to serve again as chairman of this group, and the Vice Chairman of the Joint Chiefs of Staff to serve as vice-chair; the Director for Program Analysis and Evaluation will serve as the executive secretary. Other members will include the DoD Comptroller, Assistant Secretary of Defense (Personnel and Readiness), Assistant Secretary of Defense (Strategy, Requirements and Resources), senior service representatives, and others as designated by the Under Secretary of Defense (Acquisition) for specific issues.

The Bottom-up Review established the baseline for the FY 1995-99 defense program. These decisions should not be revisited. The primary focus of the Program Review Group will be on programmatic issues that were not addressed or fully treated during the Bottom-Up Review. Attached to this memorandum is an initial list of these issues. Other issues may arise from review of component POM submissions. The Director for Program Analysis and Evaluation will organize issue teams--with membership drawn from cognizant OSD staffs, the Joint Staff and service representatives--to develop issues for presentation to the Program Review Group. The Program Review Group will screen and develop these issues for presentation to the Defense Resources Board (DRB).

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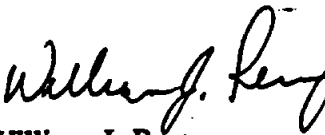
The DRB will assist the Secretary in making major program decisions. In addition to the Secretary and myself (acting as DRB Chairman in the Secretary's absence), the DRB will include the Chairman of the Joint Chiefs of Staff, Vice Chairman of the Joint Chiefs of Staff, Under Secretary of Defense (Acquisition), Under Secretary of Defense (Policy), Assistant Secretary of Defense (Personnel and Readiness), DoD Comptroller, and the Secretaries of the Military Departments. The Director for Program Analysis and Evaluation shall act as Executive Secretary. I will designate other members for individual meetings as appropriate.

In addition to issues developed by the Program Review Group and decided by the Secretary with the DRB, there will be a number of other issues that will require resolution in the program process. The Director for Program Analysis and Evaluation will present these issues directly to me and the Under Secretary of Defense (Acquisition) for decision, following coordination with other interested parties.

Detailed instructions, appropriately modified from those of previous program reviews, will be issued shortly by the Director for Program Analysis and Evaluation. The instructions will include a schedule of program review activities, leadership assignments for the teams that will prepare issue papers, and general guidance on the preparation of issue papers.

All programmatic decisions will be incorporated into the Comptroller's program/budget data base update in early November. The budget review will be conducted largely in accordance with procedures used in the recent past, although also on a much compressed schedule.

I urge all of you to continue the excellent cooperation evident in the Bottom-Up Review as we move through these final critical steps in the Administration's first Planning Programming and Budgeting cycle.


William J. Perry

Attachments

FY95-99 PROGRAM REVIEW

<u>DATE</u>	<u>EVENT</u>
Sept. 1	Bottom-Up Review released
Sept. 3	Final Fiscal Guidance issued to Components
Sept. 29	Components submit POMs
Oct. 6	Additional issue paper topics identified
Oct. 4 - Oct. 29	Program Review Group reviews and presents major program options for Defense Resources Board
Oct. 29 - Nov. 1	Secretary of Defense makes final program decisions
Nov. 3	Program Decision Memoranda issued

9/1/93

PROGRAM REVIEW ISSUES

GENERAL

Strategic Force Issues
Readiness and Sustainability
Precision Munitions
Unmanned Reconnaissance Capabilities
Strategic Mobility
Major Weapon Systems Funding
Post-FYDP Defense Program
NFIP/TIARA

ARMY

Army Reserve Component Equipment Level and Force Structure
Armored Vehicle Modernization
Utility Helicopters

NAVY

Surface Combatant Modernization
Navy/Marine TacAir Integration
V-22/Medium Lift Replacement (DAB)

AIR FORCE

Heavy Bomber Force Conventional Enhancements
Space-Based Early Warning System Capabilities
Strategic Airlift Force Structure Options (C-17 DAB)

INFRASTRUCTURE

Civilian Work Force Reduction Strategy
Defense Agency Manpower
Depot Maintenance
Defense Health Program
Defense Strategic Logistics Plan
Science and Technology Program
DoD FY 1995 BRAC Process



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IMMEDIATE RELEASE

September 1, 1993

SECRETARY ASPIN ANNOUNCES BOTTOM UP REVIEW RESULTS

It was December 1991 at Georgetown University that candidate Bill Clinton pledged to "restructure our military forces for a new era." Today, Secretary of Defense Les Aspin announced fulfillment of that pledge. "We'll have a force based on tomorrow's requirements, a lean, mobile, high-tech force ready to protect Americans against the real dangers they face in this new era," Secretary Aspin said.

The review was a highly collaborative effort composed of a steering group chaired by the Under Secretary of Defense for Acquisition and included representatives from the offices within the Office of the Secretary of Defense, the Joint Staff, and the Services.

Its unprecedented scope encompasses all major elements of defense planning, from the formulation of strategy, to construction of force structure, to weapon system modernization, and finally the reconfiguring of the Department of Defense (DoD) infrastructure.

"It couldn't be any other way. The process has brought the civilian and military communities closer together. We've established a working relationship over the last five months that would have taken a year or two to develop with this review," said Secretary Aspin.

The Bottom-Up Review's analytic process reviewed both the new dangers and opportunities foreseen in the post-Cold War world. The review developed new military strategies and plans to carry out these strategies in force structure, weapons modernization, and new defense initiatives.

The review identifies force structure required to maintain the capabilities to win two nearly simultaneous major regional conflicts. In this force structure the Army will have 10 active divisions and 15 reserve brigades, the Navy will maintain 11 carrier battlegroups and one reserve carrier, the Marine Corps will have five active brigades and one reserve division, and the Air Force will retain 13 active duty and seven reserve fighter wings.

(MORE)

To help these smaller forces remain combat ready, the review calls for force enhancements such as:

- Additional prepositioned equipment;
- Additional airlift/sealift;
- Improved anti-armor and precision-guided munitions;
- Improved Army National Guard combat brigade readiness.

The United States will continue its overseas presence to deter regional aggression, while retaining its commitments to peacekeeping and other military operations under the Bottom-Up Review.

As President Clinton said in February 1993, "The men and women who serve under the American Flag will be the best trained, best equipped, best prepared fighting force in the world, so long as I am President."

-END-

Force Structure Excerpts

Bottom-Up Review

Les Aspin
Secretary of Defense

September 1, 1993

NATIONAL SECURITY IN THE POST-COLD WAR WORLD

Introduction

The Cold War is behind us. The Soviet Union is no longer. The threat that drove our defense decision-making for four and a half decades — that determined our strategy and tactics, our doctrine, the size and shape of our forces, the design of our weapons, and the size of our defense budgets — is gone.

Now that the Cold War is over, the questions we face in the Department of Defense are: How do we structure the armed forces of the United States for the future? How much defense is enough in the post-Cold War era?

Several important events over the past four years underscore the revolutionary nature of recent changes in the international security environment and shed light on this new era and on America's future defense and security requirements.

- In 1989, the fall of the Berlin Wall and the collapse of communism throughout Eastern Europe precipitated a strategic shift away from containment of the Soviet empire.
- In 1990, Iraq's brutal invasion of Kuwait signaled a new class of regional dangers facing America — dangers spurred not by a global, empire-building ideological power, but by rogue leaders set on regional domination through military aggression while simultaneously pursuing nuclear, biological, and chemical weapons capabilities. The world's response to Saddam's invasion also demonstrated the potential in the new era for broad-based, collective military action to thwart such tyrants.
- In 1991, the failed Soviet coup demonstrated the Russian people's desire for democratic change and hastened the collapse of the Soviet Union as a national entity and military foe.

In the aftermath of such epochal events, it has become clear that the framework that guided our security policy during the Cold War is inadequate for the future. We must determine the characteristics of this new era, develop a new strategy, and restructure our armed forces and defense programs accordingly. We cannot, as we did for the past several decades, premise this year's forces, programs, and budgets on incremental shifts from last year's efforts. We must rebuild our defense strategy, forces, and defense programs and budgets from the bottom up.

The purpose of the Bottom-Up Review is to define the strategy, force structure, modernization programs, industrial base, and infrastructure needed to meet new dangers and seize new opportunities.

An Era of New Dangers

Most striking in the transition from the Cold War is the shift in the nature of the dangers to our interests, as illustrated in Figure 1.

The new dangers fall into four broad categories:

- **Dangers posed by nuclear weapons and other weapons of mass destruction**, including dangers associated with the proliferation of nuclear, biological, and chemical weapons as well as those associated with the large stocks of these weapons that remain in the former Soviet Union.
- **Regional dangers**, posed primarily by the threat of large-scale aggression by major regional powers with interests antithetical to our own, but also by the potential for smaller, often internal, conflicts based on ethnic or religious animosities, state-sponsored terrorism, and subversion of friendly governments.

New Dangers

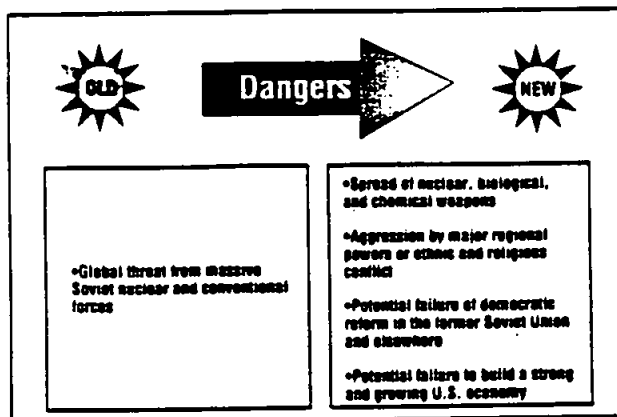


Figure 1

- Dangers to democracy and reform, in the former Soviet Union, Eastern Europe, and elsewhere.

- Economic dangers to our national security, which could result if we fail to build a strong, competitive and growing economy.

Our armed forces are central to combating the first two dangers and can play a significant role in meeting the second two. Our predictions and conclusions about the nature and characteristics of these dangers will help mold our strategy and size and shape our future military forces.

An Era of New Opportunities

During the Cold War, few entertained realistic aspirations for a markedly safer, freer world. Our strategy of containment was, perforce, defensive in nature, designed primarily to hold the Soviet Union and China in check. Today, there is promise that we can replace the East-West confrontation of the Cold War with an era in which the community of nations, guided by a common commitment to democratic principles, free-market economics, and the rule of law, can be significantly enlarged.

As Figure 2 shows, beyond new dangers, there are new opportunities: realistic aspirations that, if we dedicate ourselves to pursue worthy goals, we can reach a world of greater safety, freedom, and prosperity. Our armed forces can contribute to this objective. In brief, we see new opportunities to:

- Expand and adapt our existing security partnerships and alliances and build a larger community of democratic nations.

- Promote new regional security arrangements and alliances to improve deterrence and reduce the potential for aggression by hostile regional powers.

- Implement the dramatic reductions in the strategic nuclear arsenals of the United States and the former Soviet Union achieved in the START I and II treaties.

- Protect and advance our security with fewer resources, freeing excess resources to be invested in other areas vital to our prosperity.

New Opportunities

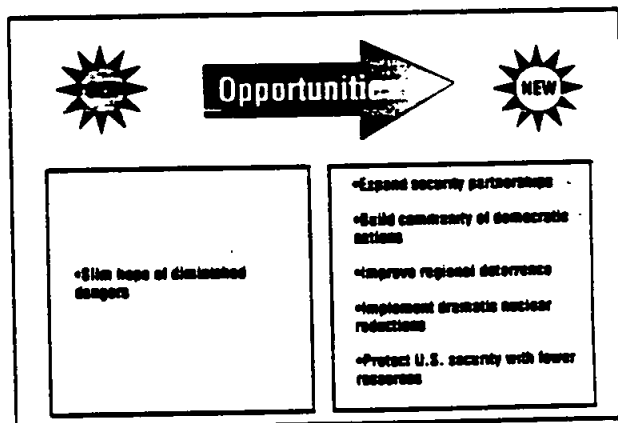


Figure 2

FORCES TO IMPLEMENT OUR DEFENSE STRATEGY

Major Regional Conflicts

During the Cold War, our military planning was dominated by the need to confront numerically superior Soviet forces in Europe, the Far East, and Southwest Asia. Now, our focus is on the need to project power into regions important to our interests and to defeat potentially hostile regional powers, such as North Korea and Iraq. Although these powers are unlikely to threaten the United States directly, these countries and others like them have shown that they are willing and able to field forces sufficient to threaten important U.S. interests, friends, and allies. Operation Desert Storm was a powerful demonstration of the need to counter such regional aggression.

Potential regional aggressors are expected to be capable of fielding military forces in the following ranges:

- 400,000 – 750,000 total personnel under arms
- 2,000 – 4,000 tanks
- 3,000 – 5,000 armored fighting vehicles
- 2,000 – 3,000 artillery pieces
- 500 – 1,000 combat aircraft
- 100 – 200 naval vessels, primarily patrol craft armed with surface-to-surface missiles, and up to 50 submarines
- 100 – 1,000 Scud-class ballistic missiles, some possibly with nuclear, chemical, or biological warheads.

Military forces of this size can threaten regions important to the United States because allied or friendly states are often unable to match the power of such a potentially aggressive neighbor. Hence, we must prepare our forces to assist those of our friends and allies in deterring, and ultimately, defeating aggression, should it occur.

Scenarios as Planning Tools. Every war that the United States has fought has been different from the last, and different from what defense planners had envisioned. For example, the majority of the bases and facilities used by the United States and its coalition partners in Operation Desert Storm were built in the 1980s, when we envisioned a Soviet invasion through Iran to be the principal threat to the Gulf region. In planning forces capable of fighting and winning major regional conflicts (MRCs), we must avoid preparing for past wars. History suggests that we most often deter the conflicts that we plan for and actually fight the ones we do not anticipate.

For planning and assessment purposes, we have selected two illustrative scenarios that are both plausible and that posit demands characteristic of those that could be posed by conflicts with a wide range of regional powers. While a number of scenarios were examined, the two that we focused on most closely in the Bottom-Up Review envisioned aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea.

Neither of these scenarios should be regarded as a prediction of future conflicts, but each provides a useful representation of the challenge presented by a well-armed regional power initiating aggression thousands of miles from the United States. As such, the scenarios serve as yardsticks against which to assess, in gross terms, the capabilities of U.S. forces. Figure 4 illustrates the scenarios and their relationship to planning for force employment across a range of potential conflicts.

In each scenario, we examined the performance of projected U.S. forces in relation to many critical parameters, including warning time, the threat, terrain, weather, duration of hostilities, and combat intensity. Overall, these scenarios were representative of likely ranges of these critical parameters.

Objectives and Methodology of the Bottom-Up Review

We undertook the Bottom-Up Review to select the right strategy, force structure, modernization programs, and supporting industrial base and infrastructure to provide for America's defense in the post-Cold War era.

Figure 3 shows the step-by-step process we used to develop key assumptions, broad principles, and general objectives and translate them into a specific plan for our strategy, forces, and defense resources.

These steps included:

1. Assessing the post-Cold War era, and particularly the new dangers, opportunities, and uncertainties it presents.
2. Devising a U.S. defense strategy to protect and advance our interests in this new period.

Methodology of the Bottom-Up Review

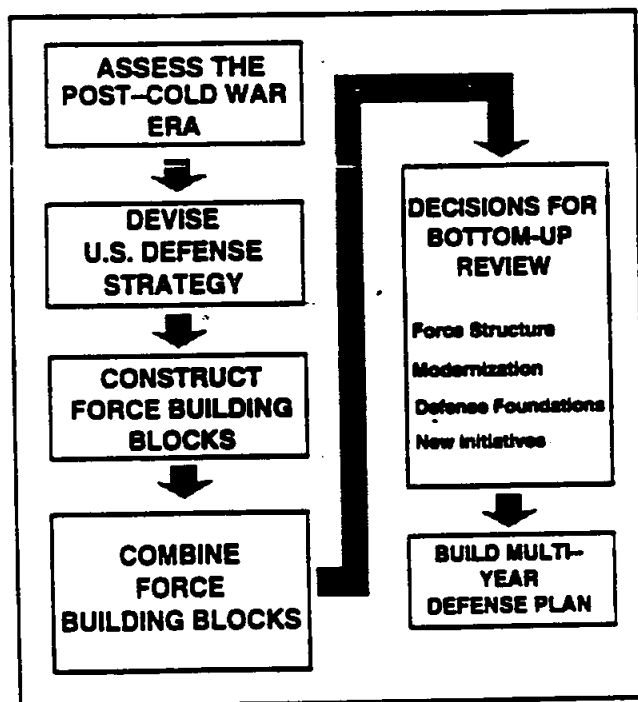


Figure 3

3. Constructing building blocks of forces to implement this strategy.

4. Combining these force building blocks to produce options for our overall force structure.

5. Complementing the force structure with weapons acquisition programs to modernize our forces, defense foundations to sustain them, and policy initiatives to address new dangers and take advantage of new opportunities.

With the Bottom-Up Review now complete, we will utilize its results to build a multi-year plan for America's future security, detailing the forces, programs, and defense budgets the United States needs to protect and advance its interests in the post-Cold War period.

The Bottom-Up Review represented a close collaboration between the civilian and military sectors of the Department of Defense. Task forces were established—including representatives from the Office of the Secretary of Defense, the Joint Staff, the unified and specified commands, each of the armed services and, where appropriate, other defense agencies—to review the major issues entailed in planning defense strategy, forces, modernization programs, and other defense foundations. Numerous studies helped to formulate the key issues for decisionmakers and provided the analytical underpinning for our review.

We offer this plan for public consideration as a means of forming a new national consensus on America's strategic role in global affairs, the military instruments needed to fulfill that role, and the level of resources necessary to provide those instruments.

Building Future Capabilities: Guiding Principles

Certain other underlying principles guided our effort during the Bottom-Up Review. In his inaugural address, President Clinton pledged to keep America's military the best trained, best equipped, best prepared

fighting force in the world. To fulfill that pledge, we must keep it the focus of our effort throughout the planning, programming, and budgeting process.

First, we must **keep our forces ready to fight**. We have already witnessed the challenges posed by the new dangers in operations like Just Cause (Panama), Desert Storm (Iraq), and Restore Hope (Somalia). Each of these was a "come as you are" campaign with little time to prepare our forces for the challenges they met.

The new dangers thus demand that we keep our forces ready to fight as a top priority in allocating scarce defense resources. We must adequately fund operations and maintenance accounts, maintain sufficient stocks of spare parts, keep our forces well-trained and equipped, and take the other steps essential to preserving readiness.

A key element of maintaining forces ready to fight is to **maintain the quality of our people**, so that they remain the best fighting force in the world. This means keeping our personnel highly motivated by treating them fairly and maintaining their quality of life. It also means continuing to recruit talented young men and women, expanding career opportunities for all service personnel, and putting in place programs to ease the transition to civilian life for many of our troops as we bring down the size of our forces.

We must also **maintain the technological superiority of our weapons and equipment**. Operation Desert Storm demonstrated that we produce the best weapons and military equipment in the world. This technological edge helps us to achieve victory more swiftly and with fewer casualties. We must design a balanced modernization program that will safeguard this edge and the necessary supporting industrial base without buying more weapons than we need or can afford.

Both scenarios assumed a similar enemy operation: an armor-heavy, combined-arms offensive against the outnumbered forces of a neighboring state. U.S. forces, most of which were not present in the region when hostilities commenced, had to deploy to the region quickly, supplement indigenous forces, halt the invasion, and defeat the aggressor.

Such a short-notice scenario, in which only a modest number of U.S. forces are in a region at the commencement of hostilities, is both highly stressing and plausible. History shows that we frequently fail to anticipate the location and timing of aggression, even large-scale attacks against our interests. In such cases,

it may also not be possible, prior to an attack, to reach a political consensus on the proper U.S. response or to convince our allies to grant U.S. forces access to facilities in their countries.

We also expect that the United States will often be fighting as the leader of a coalition, with allies providing some support and combat forces. As was the case in Desert Storm, the need to defend common interests should prompt our allies in many cases to contribute capable forces to the war effort. However, our forces must be sized and structured to preserve the flexibility and the capability to act unilaterally, should we choose to do so.

Scenarios as Planning Tools

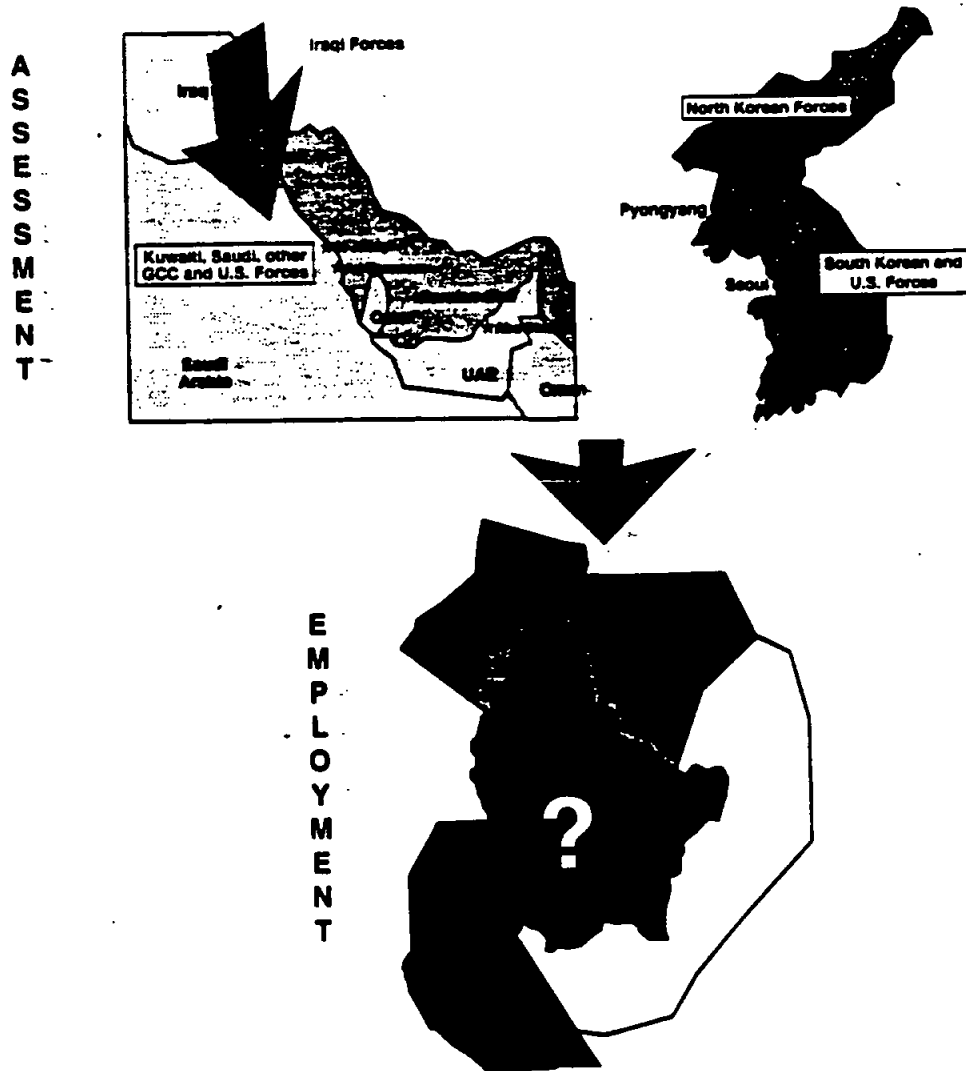


Figure 4

The Four Phases of U.S. Combat Operations

Our first priority in preparing for regional conflicts is to prevent them from ever occurring. This is the purpose of our overseas presence forces and operations, joint exercises, and other military capabilities — to deter potential regional aggressors from even contemplating an attack. Should deterrence fail and conflict occur, it is envisioned that combat operations would unfold in four main phases:

Phase 1: Halt the invasion. The highest priority in defending against a large-scale attack will most often be to minimize the territory and critical facilities that the invader can capture. Should important strategic assets fall to the invader, it might attempt to use them as bargaining chips. In addition, stopping the invasion quickly may be key to ensuring that the threatened ally can continue its crucial role in the collective effort to defeat the aggressor. Further, the more territory the enemy captures, the greater the price to take it back: The number of forces required for the counteroffensive to repel an invasion can increase, with correspondingly greater casualties, depending on the progress the enemy makes. In the event of a short-warning attack, more U.S. forces would need to deploy rapidly to the theater and enter the battle as quickly as possible.

Phase 2: Build up U.S. combat power in the theater while reducing the enemy's. Once the enemy attack had been stopped and the front stabilized, U.S. and allied efforts would focus on continuing to build up combat forces and logistics support in the theater while reducing the enemy's capacity to fight. Land, air, maritime, and special operations forces from the United States and coalition countries would continue to arrive. These forces would seek to ensure that the enemy did not regain the initiative on the ground, and they would mount sustained attacks to reduce the enemy's military capabilities in preparation for the combined-arms counteroffensive.

Phase 3: Decisively defeat the enemy. In the third phase, U.S. and allied forces would seek to mount

a large-scale, air-land counteroffensive to defeat the enemy decisively by attacking his centers of gravity, retaking territory he had occupied, destroying his war-making capabilities, and successfully achieving other operational or strategic objectives.

Phase 4: Provide for post-war stability. Although a majority of U.S. and coalition forces would begin returning to their home bases, some forces might be called upon to remain in the theater after the enemy had been defeated to ensure that the conditions that resulted in conflict did not recur. These forces could help repatriate prisoners, occupy and administer some or all of the enemy's territory, or to ensure compliance with the provisions of war-termination or cease-fire agreements.

Forces for Combat Operations

Described below are the types of forces that are needed to conduct joint combat operations in all four phases of an MRC.

Forces for Phase 1. Primary responsibility for the initial defense of their territory rests, of course, with our allies. As forces of the besieged country move to blunt an attack, U.S. forces already in the theater would move rapidly to provide assistance. However, as already mentioned, we are drawing down our overseas presence in response to the end of the Cold War. Thus, the bulk of our forces, even during the early stages of conflict, would have to come from the United States. This places a premium on rapidly deployable yet highly lethal forces to blunt an attack.

The major tasks to be performed in this phase and beyond are:

- Help allied forces establish a viable defense that halts enemy ground forces before they can achieve critical objectives.
- Delay, disrupt, and destroy enemy ground forces and damage the roads along which they are moving, in order to halt the attack. U.S. attacks would be mounted by a combination of land- and seabased

strike aircraft, heavy bombers, long-range tactical missiles, ground maneuver forces with antiarmor capabilities, and special operations forces.

- Protect friendly forces and rear-area assets from attack by aircraft or cruise and ballistic missiles, using land and sea-based aircraft, ground- and sea-based surface-to-air missiles, and special operations forces.

- Establish air superiority and suppress enemy air defenses as needed, including those in rear areas and those accompanying invading ground forces, using land- and sea-based strike and jamming aircraft as well as surface-to-surface missiles, such as the Army Tactical Missile System (ATACMS).

- Destroy high-value targets, such as weapons of mass destruction, and degrade the enemy's ability to prosecute military operations through attacks focused on his central command, control, and communications facilities. For such attacks, we would rely heavily on long-range bombers, land and sea-based strike aircraft, cruise missiles, and special operations forces.

- Establish maritime superiority, using naval task forces with mine countermeasure ships, in order to ensure access to ports and sea lines of communication, and as a precondition for amphibious assaults.



An ATACMS launch.

Forces for Phase 2. Many of the same forces employed in Phase 1 would be used in the second phase to perform similar tasks — grinding down the enemy's military potential while additional U.S. and other coalition combat power is brought into the region. As more land- and sea-based air forces arrived, emphasis would shift from halting the invasion to isolating enemy ground forces and destroying them, destroying enemy air and naval forces, destroying stocks of supplies, and broadening attacks on military-related targets in the enemy's rear area. These attacks could be supplemented with direct and indirect missile and artillery fire from ground, air, and sea forces.

Meanwhile, other U.S. forces, including heavy ground forces, would begin arriving in the theater to help maintain the defensive line established at the end of Phase I and to begin preparations for the counteroffensive.

Forces for Phase 3. The centerpiece of Phase 3 would be the U.S. and allied counteroffensive, aimed at engaging, enveloping, and destroying or capturing enemy ground forces occupying friendly territory. Major tasks within the counteroffensive include:

- Breaching tactical and protective minefields.
- Maneuvering to envelop or flank and destroy enemy forces, including armored vehicles in dug-in positions.
- Conducting or threatening an amphibious invasion.
- Dislodging and defeating infantry fighting from dug-in positions; defeating light infantry in urban terrain.
- Destroying enemy artillery.
- Locating and destroying mobile enemy reserves.

Combat power in this phase would include highly mobile armored, mechanized, and air assault forces, supported by the full complement of air power, special

operations forces, and land- and sea-based fire support. Amphibious forces would provide additional operational flexibility to the theater commander.

Forces for Phase 4. Finally, a smaller complement of joint forces would remain in the theater once the enemy had been defeated. These forces might include a carrier battle group, one to two wings of fighters, a division or less of ground forces, and special operations units.

Supporting Capabilities

The foregoing list of forces for the various phases of combat operations included only combat force elements. Several types of support capabilities would play essential roles throughout all phases.

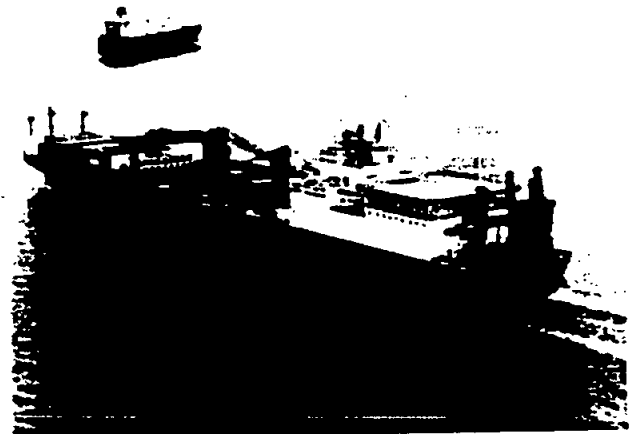
Airlift. Adequate airlift capacity is needed to bring in forces and materiel required for the first weeks of an operation. In Operations Desert Shield/Desert Storm, the United States delivered to the Gulf region, on average, more than 2,400 tons of material per day by airlift. We anticipate that at least the same level of lift capacity will be needed to support high-intensity military operations in the opening phase of a future MRC and to help sustain operations thereafter.

Prepositioning. Prepositioning heavy combat equipment and supplies, both ashore and afloat, can greatly reduce both the time required to deploy forces to distant regions and the number of airlift sorties devoted to moving such supplies. Initiatives now underway will accelerate the arrival of the Army's heavy forces in distant theaters.

Sealift. In any major regional conflict, most combat equipment and supplies would be transported by sea. While airlift and prepositioning provide the most rapid response for deterrence and initial defense, the deployment of significant heavy ground and air forces, their support equipment, and sustainment must come by sea.

Battlefield Surveillance; Command, Control and Communications. Accurate information on the

location and disposition of enemy forces is a prerequisite for effective military operations. Hence, our planning envisions the early deployment of reconnaissance and command and control aircraft and ground-based assets to enable our forces to see the enemy and to pass information quickly through all echelons of our forces. Total U.S. intelligence and surveillance capability will be less than it was during the Cold War, but it will be better able to provide timely information to battlefield commanders. Advanced systems, such as the Joint Surveillance and Target Attack Radar System (JSTARS), the upgraded Airborne Warning and Control System (AWACS), and the MILSTAR satellite communications system, will ensure that U.S. forces have a decisive advantage in tactical intelligence and communications.



Maritime prepositioning ships.

Advanced Munitions. As U.S. operations in the Gulf War demonstrated, advanced precision-guided munitions can dramatically increase the effectiveness of U.S. forces. Precision-guided munitions already in the U.S. inventory (for example, laser-guided bombs) as well as new types of munitions still under development are needed to ensure that U.S. forces can operate successfully in future MRCs and other types of conflicts. New "smart" and "brilliant" munitions under development hold promise of dramatically improving the capabilities of U.S. air, ground, and maritime forces to destroy enemy armored vehicles and halt invading ground forces, as well as destroy fixed targets at longer ranges, reducing exposure to enemy air defenses.

Aerial Refueling. Large numbers of aerial-refueling aircraft would be needed to support many components of a U.S. theater campaign. Fighter aircraft deploying over long distances require aerial refueling. Airlifters can also carry more cargo longer distances if enroute aerial refueling is available. Aerial surveillance and control platforms, such as AWACS and JSTARS, also need airborne refueling in order to achieve maximum mission effectiveness.

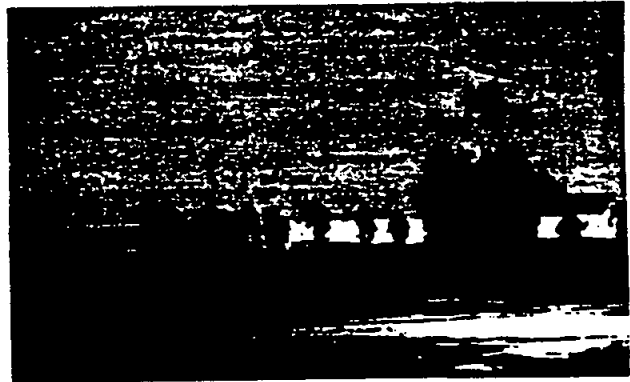
The MRC Building Block

In planning future force structure and allocating resources, we established forces levels and support which should enable us to win one MRC across a wide range of likely conflicts. Our detailed analyses of future MRCs, coupled with military judgment of the outcomes, suggest that the following forces will be adequate to execute the strategy outlined above for a single MRC:

- 4 - 5 Army divisions
- 4 - 5 Marine Expeditionary Brigades
- 10 Air Force fighter wings
- 100 Air Force heavy bombers
- 4 - 5 Navy aircraft carrier battle groups
- Special operations forces

These forces constitute a prudent building block for force planning purposes. In the event of an actual regional conflict, our response would depend on the nature and scale of the aggression and circumstances elsewhere in the world. If the initial defense fails to halt the invasion quickly, or if circumstances in other parts of the world permit, U.S. decisionmakers may decide to commit more forces than those listed (for example, two additional Army divisions.) These added forces would help either to achieve the needed advantage over the enemy, to mount the decisive counteroffensive, or accomplish more ambitious war objectives, such as the complete destruction of the enemy's war-making potential. But our analysis also led us to the conclusion that enhancements to our military forces, focused on ensuring our ability to conduct a successful initial-defense, would both reduce our overall ground

force requirements and increase the responsiveness and effectiveness of our power projection forces.



U.S. Marines conducting amphibious assault exercise.

Fighting Two MRCs

In this context, we decided early in the Bottom-Up review that the United States must field forces sufficient to fight and win two nearly simultaneous major regional conflicts. This is prudent for two reasons:

- First, we need to avoid a situation in which the United States in effect makes simultaneous wars more likely by leaving an opening for potential aggressors, to attack their neighbors, should our engagement in a war in one region leave little or no force available to respond effectively to defend our interests in another.

- Second, fielding forces sufficient to win two wars nearly simultaneously provides a hedge against the possibility that a future adversary — or coalition of adversaries — might one day confront us with a larger-than-expected threat. In short, it is difficult to predict precisely what threats we will confront ten to twenty years from now. In this dynamic and unpredictable post-Cold War world we must maintain military capabilities that are flexible and sufficient to cope with unforeseen threats.

For the bulk of our ground, naval, and air forces, fielding forces sufficient to provide this capability involves duplicating the MRC building block described above. However, in planning our overall force struc-

ture, we must recognize two other factors. First, we must have sufficient strategic lift to deploy forces when and where we need them. Second, certain specialized high-leverage units or unique assets might be "dual tasked," that is, used in both MRCs.

For example, certain advanced aircraft — such as B-2s, F-117s, JSTARs, AWACS, and EF-111s — that we have purchased in limited numbers because of their expense would probably be dual-tasked.

Force Enhancements to Support Our Strategy

As previously mentioned, we have already undertaken or are planning a series of enhancements to our

forces to improve their capability, flexibility, and lethality. These enhancements are especially geared toward buttressing our ability to conduct a successful initial defense in any major regional conflict.

As shown in Figure 5, these enhancements include improving: (1) strategic mobility through more prepositioning and enhancements to airlift and sealift; (2) the strike capabilities of aircraft carriers; (3) the lethality of Army firepower; and (4) the ability of long-range bombers to deliver conventional smart munitions.

Strategic Mobility. Our plans call for substantial enhancements to our strategic mobility — most of

Force Enhancements to Halt a Short-Warning Attack

		Today's Force	Future Force
Persian Gulf Region	Prepo	1 Battalion Training Set 1 Maritime Prepositioning Ship (MPS) Squadron 7 Prepositioning Ships	2 Brigade Sets ashore 1 Brigade Set afloat* 1 MPS Squadron 7 Prepositioning Ships
	Forces	1 Carrier Battle Group (Tether)	1 Carrier Battle Group (Tether)
PHASE I Halt Invasion		FAIR - Lack of heavy forces to help stop invader - Insufficient prepositioning - Limited antiarmor capability - Limited Anti-Tactical Ballistic Missile (ATBM) capability	GOOD - 3 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Air, land, and sea antiarmor enhancements - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces
KOREA	Prepo	1 Brigade-Sized Marine Expeditionary Force (MEF) 1 MPS Squadron	1 Brigade Set ashore 1 Brigade Set afloat* 2 Brigade-sized MEF (2 MPS Squadrons)
	Forces	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF
PHASE I Halt Invasion		GOOD - Substantial in-place forces - Established Command, Control and Communications/Intelligence (C3I) network - Rapid reinforcement from Japan, Okinawa - Limited ATBM capability	GOOD - 2 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Air, land, and sea antiarmor enhancements - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces

* Brigade Set would be positioned to "swing" to either region.

Figure 5

which were first identified in the 1991 Mobility Requirements Study (MRS). First, we will either continue the program to purchase and deploy the C-17 airlifter or purchase other airlifters to replace our aging C-141 transport aircraft. Development of the C-17 has been troubled from the start and we will continue to monitor the program's progress closely, but significant, modern, flexible airlift capacity is essential to our defense strategy. A decision on the C-17 will be made after a thorough review by the Defense Acquisition Board is completed over the next several weeks. Second, we plan to keep an Army brigade set of heavy armor afloat on ships deployed abroad that could be sent either to the Persian Gulf or to Northeast Asia on short notice. Other prepositioning initiatives would accelerate the arrival of Army heavy units in Southwest Asia and Korea. Third, we will increase the capacity of our surge sealift fleet to transport forces and equipment rapidly from the United States to distant regions by purchasing additional roll-on/roll-off ships. Fourth, we will improve the readiness and responsiveness of the Ready Reserve Force (RRF) through a variety of enhancements. Finally, we will fund various efforts to improve the "fort-to-port" flow of personnel, equipment, and supplies in the United States.

Naval Strike Aircraft. The Navy is examining a number of innovative ways to improve the firepower aboard its aircraft carriers. First, the Navy will improve its strike potential by providing a precision ground-attack capability to many of its F-14 aircraft. It will also acquire stocks of new "brilliant" antiarmor weapons for delivery by attack aircraft. Finally, the Navy plans to develop the capability to fly additional squadrons of F/A-18s to forward-deployed aircraft carriers that would be the first to arrive in response to a regional contingency. These additional aircraft would increase the power of the carriers during the critical early stages of a conflict.

Army Firepower. The Army is developing new, smart submunitions that can be delivered by ATACMS, the Multiple-Launch Rocket System (MLRS), the Tri-Service Standoff Attack Missile (TSSAM) now under development, and by standard tube artillery. In addition, the Longbow fire control radar system will in-

crease the effectiveness and survivability of the AH-64 Apache attack helicopter. We are also examining more prepositioning of ATACMS and MLRS and having Apaches self-deploy from their overseas bases so that all would be available in the early stages of a conflict.

Air Force Long-Range Bombers and Munitions. The Air Force enhancements will be in two areas, bombers and munitions. First, we plan to modify the Air Force's B-1 and B-2 long-range, heavy bombers to improve their ability to deliver "smart" conventional munitions against attacking enemy forces and fixed targets. Second, we will develop all-weather munitions. For example, the Air Force is developing a guidance package for a tactical munitions dispenser filled with anti-armor submunitions that can be used in all types of weather. These programs will dramatically increase our capacity to attack and destroy critical targets in the crucial opening days of a short-warning conflict.

In addition, two other force enhancements are important to improving our ability to respond to the demanding requirement of two nearly simultaneous MRCs:

Reserve Component Forces. We have undertaken several initiatives to improve the readiness and flexibility of Army National Guard combat units and other Reserve Component forces in order to make them more readily available for MRCs and other tasks. For example, one important role for combat elements of the Army National Guard is to provide forces to supplement active divisions, should more ground combat power be needed to deter or fight a second MRC. In the future, Army National Guard combat units will be better trained, more capable, and more ready. If mobilized early during a conflict, brigade-sized units could provide extra security and flexibility if a second conflict arose while the first was still going on. In addition, the Navy plans to increase the capability and effectiveness of its Navy/Marine Corps Reserve Air Wing through the introduction of a reserve/training aircraft carrier.

Allied Military Capabilities. We will continue to help our allies in key regions improve their own defense capabilities. For example, we are assisting South Korea in its efforts to modernize its armed forces and take on greater responsibility for its own defense — including conclusion of an agreement to co-produce F-16 aircraft.

In Southwest Asia, we are continuing to improve our defense ties with our friends and allies in the region through defense cooperation agreements, more frequent joint and combined exercises, equipment prepositioning, frequent force deployments, and security assistance. We are also providing modern weapons, such as the M1A2 tank to Kuwait and the Patriot system to Kuwait and Saudi Arabia, to improve the self-defense capabilities of our friends and allies in the Gulf region.

Peace Enforcement and Intervention Operations

The second set of operations for which we must shape and size our forces includes peace enforcement and intervention. The types, numbers, and sophistication of weapons in the hands of potential adversaries in such operations can vary widely, with enforcement-type operations being the most demanding. For planning purposes, we assume that the threat we would face would include a mix of regular and irregular forces possessing mostly light weapons, supplemented by moderately sophisticated systems, such as antitank and antiship guided missiles, surface-to-air missiles, land and sea mines, T-54 and T-72-class tanks, armored personnel carriers, and towed artillery and mortars. Adversary forces might also possess a limited number of mostly older combat aircraft (e.g., MiG-21s, 23s), a few smaller surface ships, (e.g., patrol craft), and perhaps a few submarines.

In most cases, U.S. involvement in peace enforcement operations would be as part of a multinational effort under the auspices of the United Nations or another international body. U.S. and coalition forces would have several key objectives in a peace enforce-

ment or intervention operation, each of which would require certain types of combat forces to achieve:

- Forced entry into defended airfields, ports, and other facilities and seizing and holding these facilities.
- Controlling the movement of troops and supplies across borders and within the target country, including enforcing a blockade or quarantine of maritime commerce.
- Establishing and defending zones in which civilians are protected from external attacks.
- Securing protected zones from internal threats, such as snipers, terrorist attacks, and sabotage.
- Preparing to turn over responsibility for security to peacekeeping units and/or a reconstituted administrative authority.

The prudent level of forces that should be planned for a major intervention or peace enforcement operation is:

- 1 air assault or airborne division
- 1 light infantry division
- 1 Marine Expeditionary Brigade
- 1 – 2 carrier battle groups
- 1 – 2 composite wings of Air Force aircraft
- Special operations forces
- Civil affairs units
- Airlift and sealift forces
- Combat support and service support units
- 50,000 total combat and support personnel.

These capabilities can be provided largely by the same collection of general purpose forces needed for the MRCs, so long as those forces had the appropriate training needed for peacekeeping or peace enforcement. This means that the United States would have to forgo the option of conducting sizable peace enforcement or intervention operations at the same time it was fighting two MRCs.

Overseas Presence

The final set of requirements that we use to size general purpose forces are those related to sustaining the overseas presence of U.S. military forces. U.S. forces deployed abroad protect and advance our interests and perform a wide range of functions that contribute to our security.

The Bottom-Up Review reached a number of conclusions on the future size and shape of our overseas presence.

In Europe, we will continue to provide leadership in a reinvigorated NATO, which has been the bedrock of European security for over four decades. We plan to retain about 100,000 troops there — a commitment that will allow the United States to continue to play a leading role in the NATO alliance and provide a robust capability for multinational training and crisis response. This force will include about two and one-third wings of Air Force fighters and substantial elements of two Army divisions, along with a corps headquarters and other supporting elements. Equipment for bringing these in-place divisions to full strength will remain prepositioned in Europe, along with the equipment of one additional division that would deploy to the region in the event of conflict.

U. S. Army forces will participate in two multinational corps with German forces. Their training will focus on missions involving rapid deployment to conflicts outside of central Europe and "nontraditional" operations, such as peace enforcement, in addition to their long-standing mission of stabilization of central Europe. These missions might lead, over time, to changes in the equipment and configuration of Army units stationed in Europe. The Air Force will continue to provide unique theater intelligence, lift, and all-weather precision-strike capabilities critical to U.S. and NATO missions. In addition, U.S. Navy ships and submarines will continue to patrol the Mediterranean Sea and other waters surrounding Europe.

In Northeast Asia, we also plan to retain close to 100,000 troops. As recently announced by President

Clinton, our commitment to South Korea's security remains undiminished, as demonstrated by the one U.S. Army division consisting of two brigades and one wing of U.S. Air Force combat aircraft we have stationed there. In light of the continuing threat of aggression from North Korea, we have frozen our troop levels in South Korea and are modernizing South Korean and American forces on the peninsula. We are also exploring the possibility of prepositioning more military equipment in South Korea to increase our crisis-response capability. While plans call for the eventual withdrawal of one of our two Army brigades from South Korea, President Clinton recently reiterated that our troops will stay in South Korea as long as its people want and need us there.

On Okinawa, we will continue to station a Marine Expeditionary Force and an Army special forces battalion. In Japan, we have homeported the aircraft carrier *Independence*, the amphibious assault ship *Bellau Wood*, and their support ships. We will also retain approximately one and one-half wings of Air Force combat aircraft in Japan and Okinawa, and the Navy's Seventh Fleet will continue to routinely patrol the western Pacific.



U.S. F-15 fighter leads two Japanese Self Defense fighters.

In Southwest Asia, local sensitivities to a large-scale Western military presence on land necessitate heavier reliance on periodic deployments of forces, rather than routine stationing of forces on the ground. The Navy's Middle East Force of four to six ships,

which has been continuously on patrol in the Persian Gulf since 1945, will remain. In addition, we plan to have a brigade-sized set of equipment in Kuwait to be used by rotating deployments of U.S. forces that will train and exercise there with their Kuwaiti counterparts. We are also exploring options to preposition a second brigade set elsewhere on the Arabian peninsula.

These forces have been supplemented temporarily by several squadrons of land-based combat aircraft that have remained in the Gulf region since Operation Desert Storm and, along with other coalition aircraft, are now helping to enforce U.N. resolutions toward Iraq.

Another significant element of our military posture in Southwest Asia is the equipment prepositioned on ships that are normally anchored at Diego Garcia. In addition to a brigade-sized set of equipment for the Marine Corps, we have seven afloat prepositioning ships supporting Army, Air Force, and Navy forces.

In Africa, we will continue important formal and informal access agreements to key facilities and ports which allow our forces to transit or stop on the African continent. We will also deploy forces to Africa, as in recent operations like Sharp Edge (Liberia) and Restore Hope (Somalia), when our interests are threatened or our assistance is needed and requested. Today, more than 4,000 U.S. troops remain deployed in Somalia as part of the U.N. force seeking to provide humanitarian assistance to that country.

In Latin America, our armed forces will help to promote and expand recent trends toward democracy in many countries. They will also continue to work in concert with the armed forces and police of Latin American countries to combat drug traffickers. The United States will also retain a military presence in Panama, acting as Panama's partner in operating and defending the Canal during the transition to full Panamanian control of the canal in 1999.

Naval Presence. Sizing our naval forces for two nearly simultaneous MRCs provides a fairly large and

robust force structure that can easily support other, smaller regional operations. However, our overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed to win two MRCs. The flexibility of our carriers, and their ability to operate effectively with relative independence from shore bases, makes them well suited to overseas presence operations, especially in areas such as the Persian Gulf, where our land-based military infrastructure is relatively underdeveloped. For these reasons, the force of carriers, amphibious ships, and other surface combatants in the Clinton-Aspin defense plan was sized based on the exigencies of overseas presence, as well as the MRCs.

U.S. Navy and Marine forces play important roles in our approach to overseas presence in these three regions, as well as others. In recent years, we have sought to deploy a sizable U.S. naval presence — generally, a carrier battle group accompanied by an amphibious ready group — more or less continuously in the waters off Southwest Asia, Northeast Asia, and Europe (most often, in the Mediterranean Sea). However, in order to avoid serious morale and retention problems that can arise when our forces are asked to remain deployed for excessively long periods, we will experience some gaps in carrier presence in these areas in the future.



The aircraft carrier USS Dwight D. Eisenhower transiting the Suez Canal.

In order to avoid degradation in our regional security posture, we have identified a number of ways to fill these gaps and to supplement our posture even when carriers are present. For example, in some circumstances, we may find it possible to center naval expeditionary forces around large-deck amphibious assault ships carrying AV-8B attack jets and Cobra attack helicopters, as well as a 2,000-man Marine Expeditionary Unit. Another force might consist of a Tomahawk sea-launched cruise missile-equipped Aegis cruiser, a guided missile destroyer, attack submarines, and P-3 land-based maritime patrol aircraft.

In addition to these "maritime" approaches to sustaining overseas presence, a new concept is being developed that envisions using tailored joint forces to conduct overseas presence operations. These "Adaptive Joint Force Packages" could contain a mix of air, land, special operations, and maritime forces tailored to meet a theater commander's needs. These forces, plus designated backup units in the United States, would train jointly to provide the specific capabilities needed on station and on call during any particular period. Like maritime task forces, these joint force packages will also be capable of participating in combined military exercises with allied and friendly forces.

Together, these approaches will give us a variety of ways to manage our overseas presence profile, balancing carrier availability with the deployment of other types of units. Given this flexible approach to providing forces for overseas presence, we can meet the needs of our strategy with a fleet of eleven active aircraft carriers and one reserve/training carrier.

Strategic Nuclear Forces

The changing security environment presents us with significant uncertainties and challenges in planning our strategic nuclear force structure. In light of the dissolution of the Warsaw Pact, the break-up of the Soviet Union, the conclusion of the START I and II treaties, and our improving relationship with Russia, the threat of massive nuclear attack on the United States is lower than at any time in many years.

However, a number of issues affecting our future strategic nuclear posture must still be addressed. Tens of thousands of nuclear weapons continue to be deployed on Russian territory and on the territory of three other former Soviet republics. Even under START II, Russia will retain a sizable residual nuclear arsenal. And, despite promising trends, the future political situation in Russia remains highly uncertain.



B-2 bombers being refueled by KC-10 tanker.

In addition, many obstacles must be overcome before the ratification of START II, foremost of which are Ukrainian ratification of START I and Ukraine's and Kazakhstan's accession to the Nuclear Nonproliferation Treaty as nonnuclear-weapon states — a condition required by Russia prior to implementing START I. Moreover, even if these obstacles can be overcome, implementation of the reductions mandated in START I and II will not be completed for almost 10 years. Thus, while the United States has already removed more than 3,500 warheads from ballistic missile systems slated for elimination under START I (some 90 percent of the total required), in light of current uncertainties, we must take a measured approach to further reductions.

Two principal guidelines shape our future requirements for strategic nuclear forces: to provide an effective deterrent while remaining within START I/II limits, and to allow for additional forces to be reconstituted, in the event of a threatening reversal of events.

The Bottom-Up Review did not address nuclear force structure in detail. As a follow-up to the Bottom-Up review, a comprehensive study of U.S. nuclear forces is being conducted. For planning purposes, we are evolving toward a future strategic nuclear force that by 2003 will include:

- 18 Trident submarines equipped with C-4 and D-5 missiles.
- 500 Minuteman III missiles, each carrying a single warhead.
- Up to 94 B-52H bombers equipped with air-launched cruise missiles and 20 B-2 bombers.

Conclusion

At the conclusion of its comprehensive assessment of future U.S. defense needs, the Bottom-Up Review determined that the reduced force structure shown in Figure 6, which will be reached by about the end of the

decade, can carry out our strategy and meet our national security requirements.

This force structure meets our requirements for overseas presence in peacetime and a wide range of smaller-scale operations. It will also give the United States the capability to meet the most stressing situation we may face -- the requirement to fight and win two major regional conflicts occurring nearly simultaneously.

In addition, this force structure provides sufficient capabilities for strategic deterrence and defense. It also provides sufficient forces, primarily Reserve Component, to be held in strategic reserve and utilized if and when needed. For example, they could deploy to one or both MRCs, if operations do not go as we had planned. Alternatively, these forces could be used to "backfill" for overseas presence forces redeployed to an MRC. Finally, this force structure also meets an important new criterion for our forces — flexibility to deal with the uncertain nature of the new dangers.

U.S. Force Structure – 1999

Army	<ul style="list-style-type: none"> • 10 divisions (active) • 5+ divisions (reserve)
Navy	<ul style="list-style-type: none"> • 11 aircraft carriers (active) • 1 aircraft carrier (reserve/training) • 45-55 attack submarines • 346 ships
Air Force	<ul style="list-style-type: none"> • 13 fighter wings (active) • 7 fighter wings (reserve) • Up to 184 bombers
Marine Corps	<ul style="list-style-type: none"> • 3 Marine Expeditionary Forces • 174,000 personnel (active endstrength) • 42,000 personnel (reserve endstrength)
Strategic Nuclear Forces (by 2003)	<ul style="list-style-type: none"> • 18 ballistic missile submarines • Up to 94 B-52 H bombers • 20 B-2 bombers • 500 Minuteman III ICBMs (single warhead)

Figure 6

Commander-in-Chief, Pacific Air Forces	2
Commander-in-Chief, US Southern Command	5
Commander-in-Chief, US Space Command	3
Commander-in-Chief, US Special Operations Command	3
Commander-in-Chief, Strategic Air Command	3
Commander-in-Chief, US Transportation Command	20
Deputy Director for Intelligence, Central Intelligence Agency	3
National Intelligence Officer for General Purpose Forces, National Intelligence Council ...	3
Director, Defense Intelligence Agency	3
Director, Joint Staff	2
Director for Manpower and Personnel, Joint Staff	2
Director for Operations, Joint Staff	4
Director for Logistics, Joint Staff	20
Director for Strategic Plans and Policy, Joint Staff	6
Director for Command, Control, Communications, and Computers, Joint Staff	6
Director for Operational Plans and Interoperability, Joint Staff	15
Director for Force Structure, Resources, and Assessment, Joint Staff	100
Legal and Legislative Counsel to the Chairman, Joint Chiefs of Staff	50
Special Assistant to the Chairman, Joint Chiefs of Staff, for Public Affairs	5
Secretary, Joint Staff	6
Department of Defense Inspector General	6
National Defense University	2
Industrial College of the Armed Forces	2
Army War College	2
Navy War College	2
Air War College	2



Bottom-Up Review

1 September 1993

Les Aspin
Secretary of Defense

Colin Powell, General, USA
Chairman, Joint Chiefs of Staff



New Dangers

Bottom
Up
Review

- **Proliferation of Nuclear Weapons and Other Weapons of Mass Destruction, Delivery Systems**
 - Other Countries - North Korea, Iran, Iraq, etc.
 - Former Soviet Union
- **Regional Dangers**
 - Large-Scale Aggression, Intimidation
 - Ethnic, Religious, and Internal Conflict
 - State-Sponsored Terrorism
- **Dangers to Democracy, Reform and Civil Order**
 - In the Former Soviet Empire
 - In Developing World
- **Dangers of a Weak Economy**
 - Lack of Domestic Prosperity
 - Lack of International Competitiveness
 - Lack of Environmental Security



Bottom - Up Review: Analytic Process

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/Prepositioning
- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Unprecedented Collaborative Effort

Bottom
Up
Review

Bottom - Up Review

OSD Policy

OSD
Acquisition

Marine Corps

Air Force

Joint Staff

Navy

Army

Steering Group

- OSD
- Program Analysis & Evaluation
 - Comptroller
 - Personnel & Readiness
 - Reserve Affairs
 - C3I

CINCs

- USDA - Chair - Mr Deutch
- VCJCS - ADM Jeremiah
- SR&R
- PA&E
- Personnel & Readiness
- Reserve Affairs
- Comptroller
- Services



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

- *Defense Strategy*
- *Defense Planning Assumptions*
- *Force Sizing Criteria*
- *Modernization Criteria*
- *Role of Defense - Initiatives*
- *Management of Infrastructure and Defense Foundations*



Bottom - Up Review: Force Structure

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
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OPPORTUNITIES



Force Structure Options

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- Acquisition Reform
- Infrastructure



Purpose of U.S. Armed Forces

Bottom
Up
Review

We the People ...

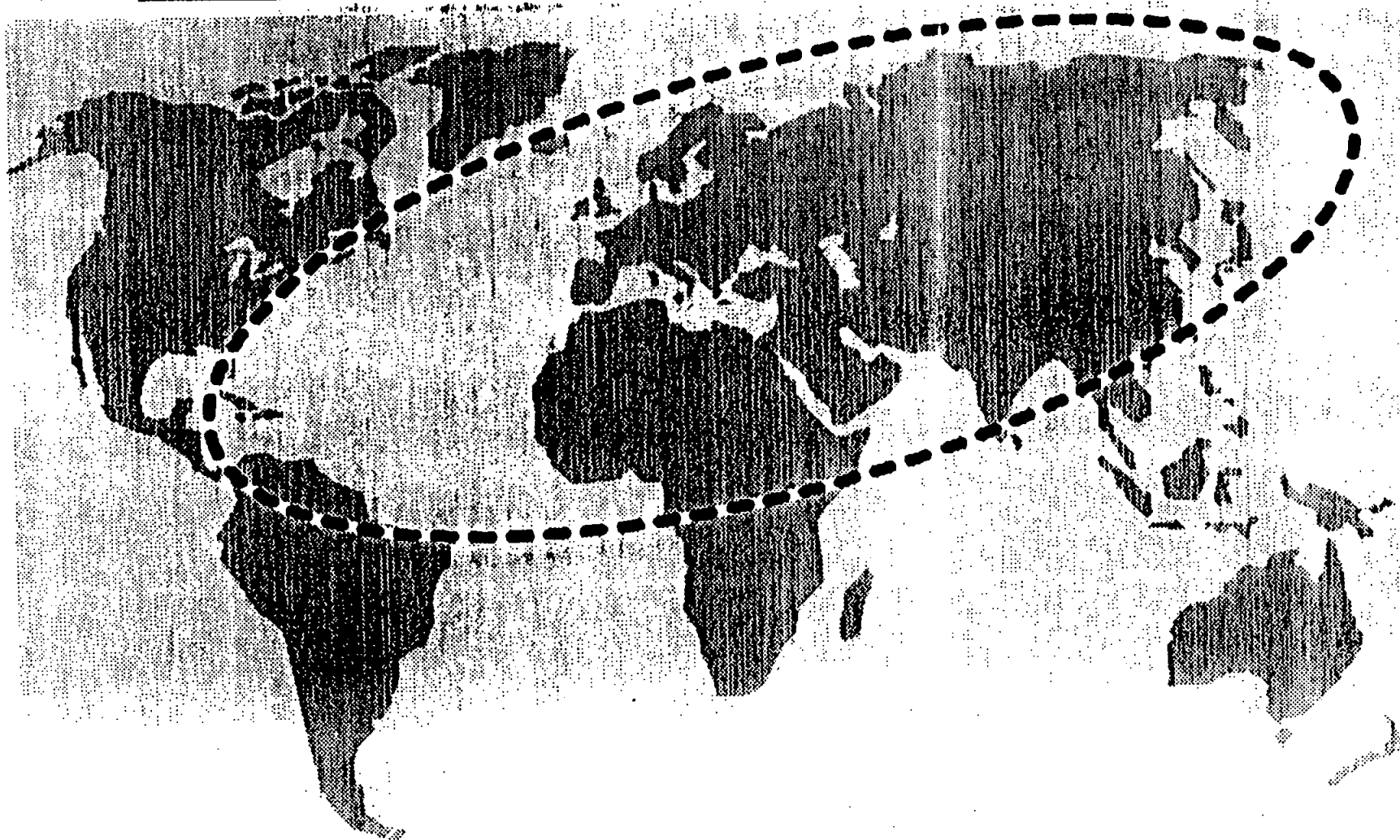
*...To Provide for the
Common Defense...*

- **To Fight and Win
the Nation's Wars**



Cold War Force Planning

Bottom
Up
Review





Assumptions

Bottom
Up
Review

Cold War

New World

Threat Forces

Soviet Empire

Iraq; Korea ??

Warning Time

One to Two Weeks

One Day

Coalition

Known

Depends on Issue

Conflict Environment

Europe/Heavy Force

Tropics to Desert

Mobility Factors

Crossing the Atlantic

Global

Risk

Nuclear Threshold

Spread of Conventional
and WMD Dangers

Maintenance & Support

Robust

Right-Sized to
Force Structure

Sustainability

Years

Months

Base Structure

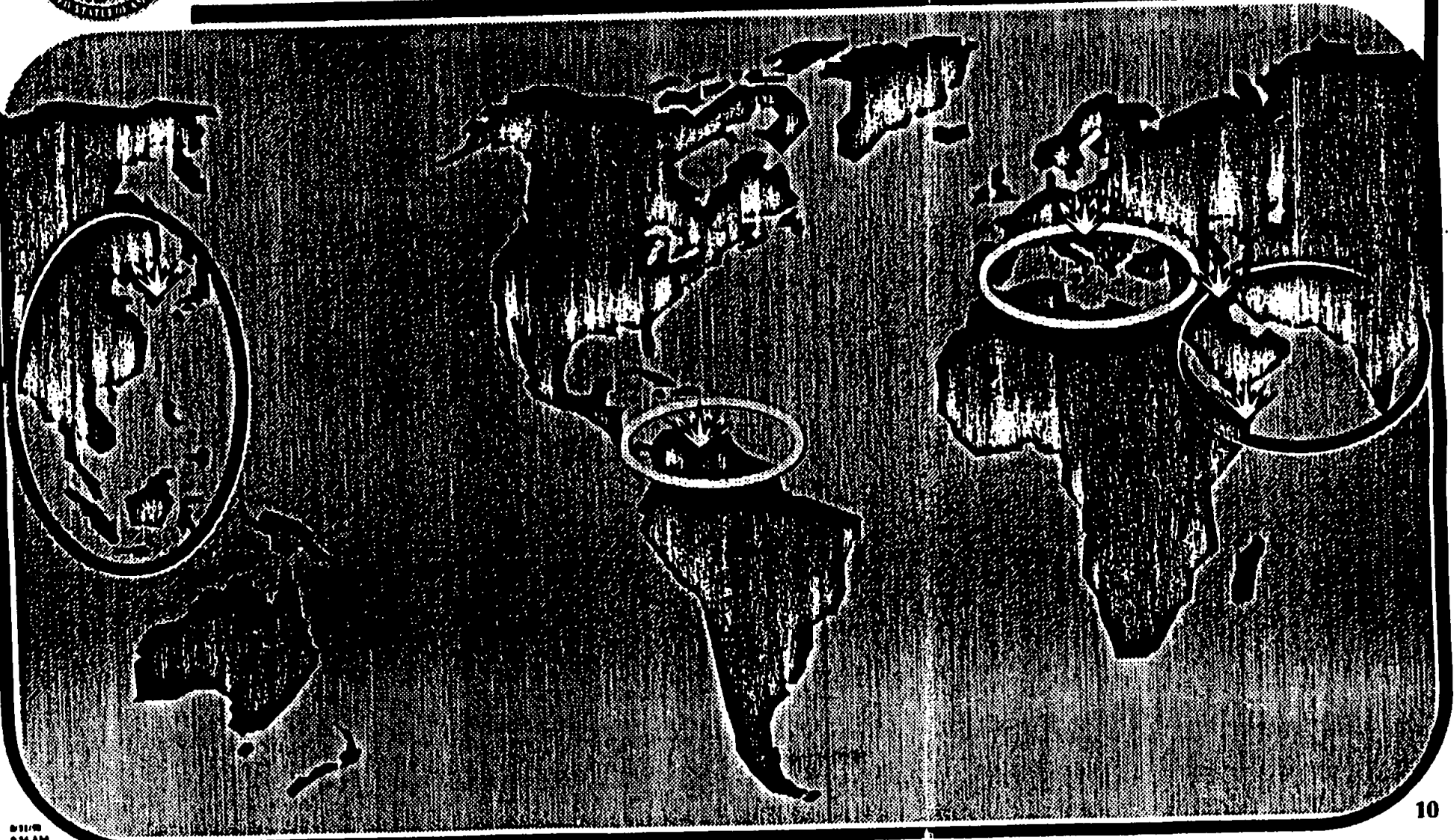
Robust

Right-Sized to
Force Structure



New World Regional Challenges

Bottom
Up
Review





Force Sizing Major Regional Conflicts

Bottom
Up
Review

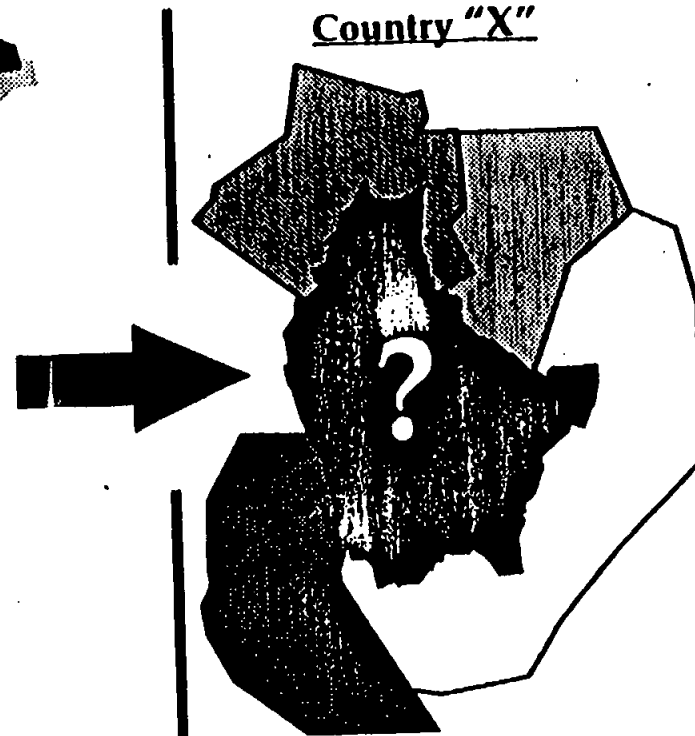
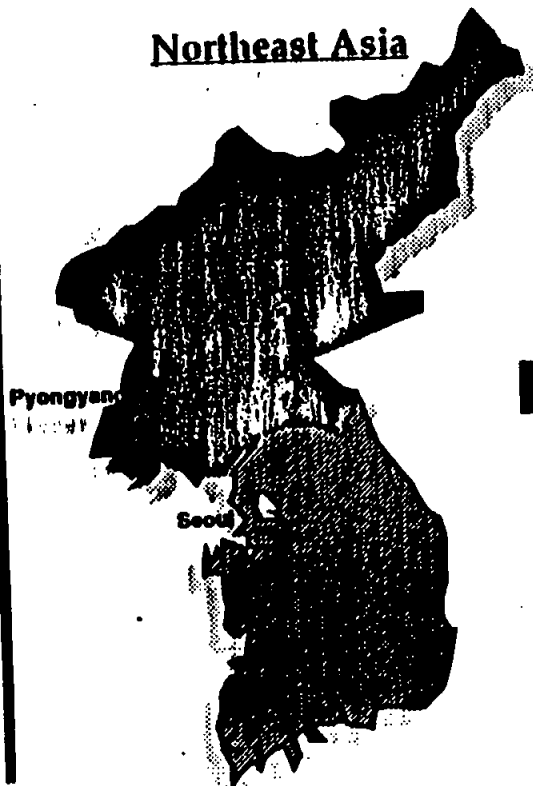
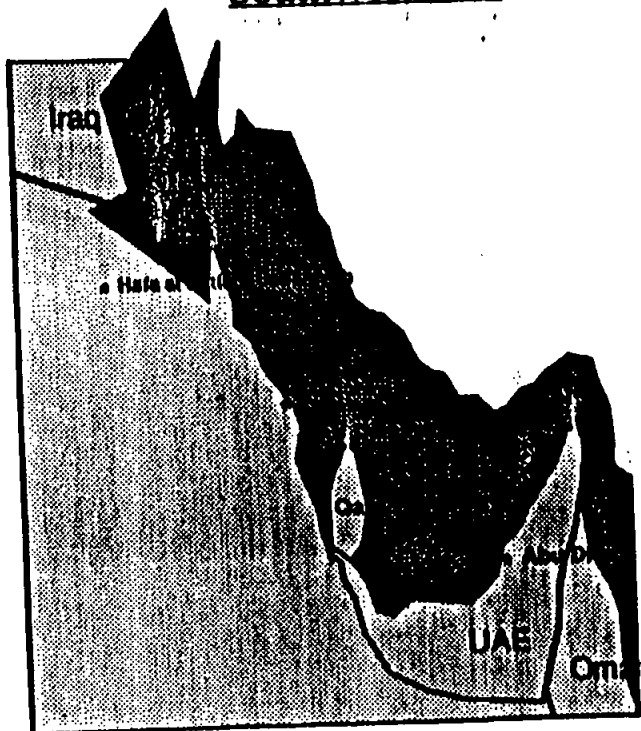
Assessment

Employment

Southwest Asia

Northeast Asia

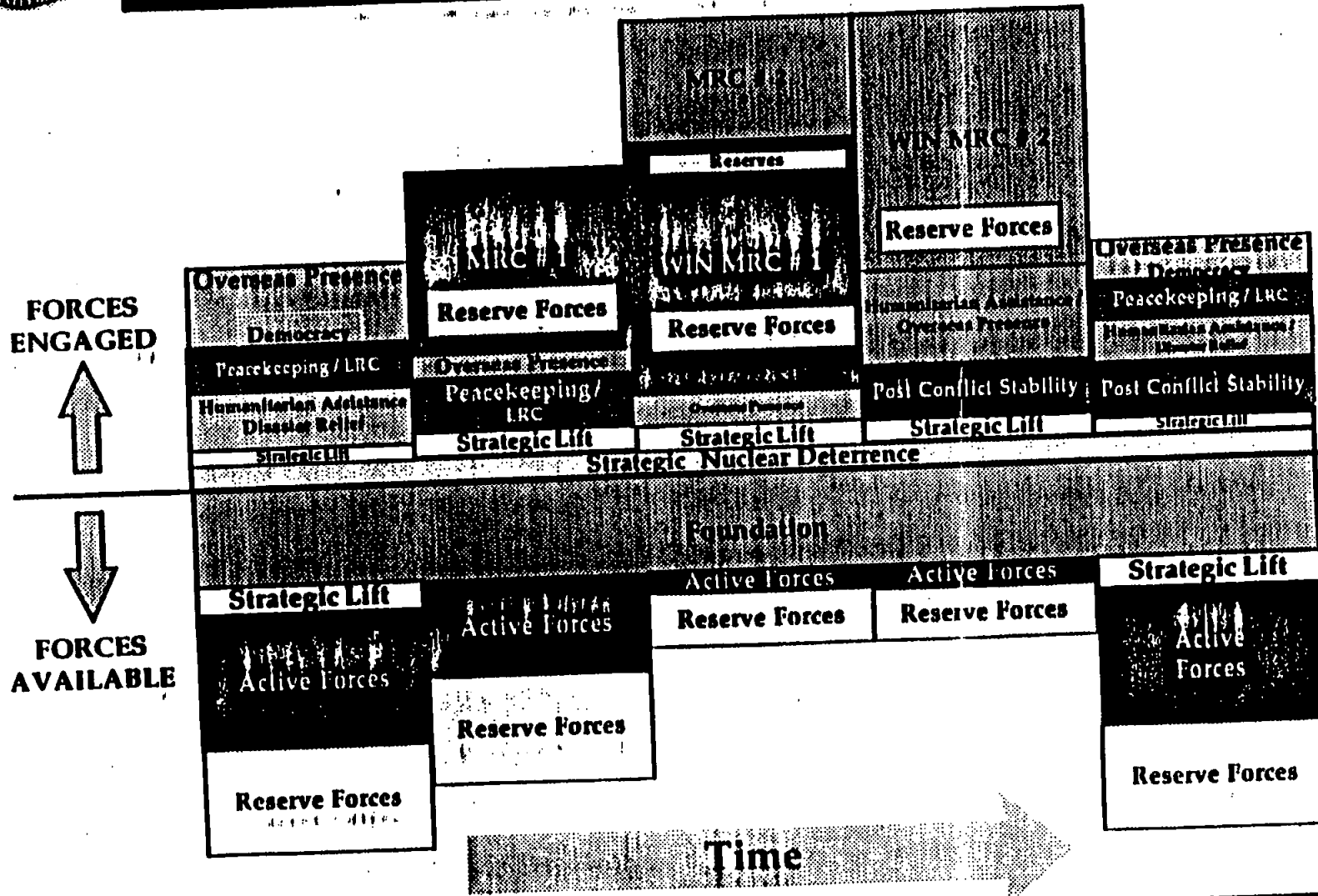
Country "X"





Conflict Dynamics

Bottom
Up
Review





Winning Two Nearly Simultaneous Major Regional Conflicts

Bottom
Up
Review

Campaign Phases

Major Regional
Conflict #1

Halt the
Invading Force

Build up Forces;
Conduct
Air Campaign

Mount Decisive
Counteroffense

Provide for
Post-War
Stability

Deploy and Sustain Forces

Major Regional
Conflict #2

Halt the
Invading Force

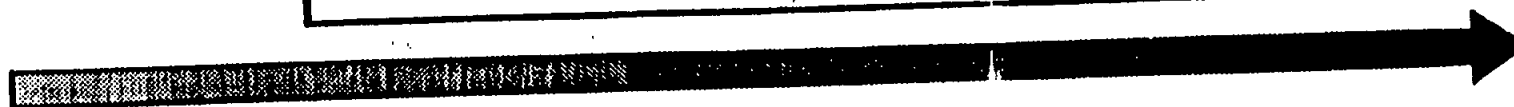
Build up Forces;
Conduct
Air Campaign

Mount Decisive
Counteroffense

Provide for
Post-War
Stability

Deploy and Sustain Forces

Time





Major Regional Conflict Force Options

Bottom
Up
Review

1

2

3

4

STRATEGY

	Win 1 Major Regional Conflict	Win 1 Major Regional Conflict with Hold in 2nd	Win in 2 Nearly Simultaneous Major Regional Conflicts	Win in 2 Nearly Simultaneous Major Regional Conflicts +
Forces:				
Army	<ul style="list-style-type: none"> • 8 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 15 Reserve Enhanced Readiness Brigades 	<ul style="list-style-type: none"> • 12 Active Divisions • 8 Reserve Division Equivalents
Navy	<ul style="list-style-type: none"> • 8 Carrier Battlegroups 	<ul style="list-style-type: none"> • 10 Carrier Battlegroups 	<ul style="list-style-type: none"> • 11 Carrier Battlegroups • 1 Reserve/training Carrier 	<ul style="list-style-type: none"> • 12 Carrier Battlegroups
Marine Corps	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division
Air Force	<ul style="list-style-type: none"> • 10 Active Fighter Wings • 6 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 14 Active Fighter Wings • 10 Reserve Fighter Wings
			Force Enhancements	



Critical Force Enhancements

Bottom
Up
Review

- Additional Army prepositioned equipment
- Additional airlift/sealift
- Improved anti-armor and precision-guided munitions
- More early-arriving Navy air
- Improve Army National Guard combat brigade readiness
- Improve Army Guard and reserve support force readiness
- Improved Command, Control, Communications and Intelligence assets
- Retained Marine Corps endstrength



Overseas Presence

Bottom
Up
Review

- Europe - About 100,000 troops
- East Asia - About 98,000 troops
 - Korea
 - 2 Army brigades
 - Air Force wing
 - Expanded prepositioning
 - Japan
 - Carrier battle group
 - Amphibious ready group
 - Marine Expeditionary Force
 - Marine airwing
 - Air Force wings
- Southwest Asia
 - Periodic deployments of naval, air and ground forces
 - Expanded prepositioning
- Global Maritime Presence

Objectives

- Display U.S. commitment
- Deter regional aggression
- Prevent regional arms races
- Improve coalition effectiveness
- Provide initial response



Peacekeeping and Other Military Operations

Bottom
Up
Review

- **Disaster Relief**
- **Humanitarian Assistance**
- **Peacekeeping**
- **Peace Enforcement**
- **Embassy Evacuations**
- **Lesser Regional Conflicts**

*Forces for peacekeeping and peace enforcement
need specialized training, doctrine and
equipment*



U.S. Force Structure

Bottom
Up
Review

Forces	FY 1990	FY 1993	Bottom-Up Review
Army Active Divisions National Guard Division Equivalents	18 10	14 6 (+2 Cadre)	10 5+
Navy Aircraft Carriers Active/Reserve Airwings Ships	15 + 1 13 / 2 546	13 + 0 11 / 2 443	11 + 1 10 / 1 346
Air Force Active Fighter Wings Reserve Fighter Wings	24 12	16 12	13 7
Marine Corps Active Endstrength Reserve Endstrength	197,000 44,000	182,000 42,000	174,000 42,000
Strategic Nuclear Forces Ballistic Missile Subs Strategic Bombers (PAA) ICBMs	34 301 1000	22 201 787	18 Up to 184 500



Bottom - Up Review: Modernization

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
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- Strategic Mobility/Prepositioning
- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Modernization

Bottom
Up
Review

- **Ballistic Missile Defense**
- **Theater Air**
- **Attack Submarines**
- **Aircraft Carriers**
- **Space Launch**
- **Military Satellite Communication**
- **Attack and Reconnaissance Helicopters**



Key Considerations

Bottom
Up
Review

- **Driven by New Dangers and New Strategy**
- **Prospects for Technology**
- **Different Nuclear Threat**
- **Industrial Base**
- **Acquisition Strategy**
- **International Cooperation**

**Consideration of Effectiveness and
Cost of Alternatives**



Ballistic Missile Defense (BMD) Program Review

Bottom
Up
Review

Problems:

- Regional theater ballistic missile threat here today
- New ballistic threat to US may emerge in future
- How much Theater Missile Defense (TMD)?
- Need for National Missile Defense (NMD)?
- How to reconcile programs with ABM treaty?

Alternatives:

- Core Theater Missile Defense (e.g. Patriot upgrades, etc.) through robust Theater Missile Defense
- National Missile Defense - technology program or system development or deployed system



TMD / NMD Program Options

Bottom
Up
Review

Current FY 95 -99 is \$39B

TMD		NMD	Technology Program		Tech Demo \$ 7 Billion	Acquisition Program		
			\$ 2 Billion Without RE:	\$ 3 Billion With RE:		\$ 8 Billion	\$ 10 Billion	
PAC-3 CORE + THAAD + AEGIS / SM-2 Block IVA + BM / C	Additional TMD Investment ↑ e.g. Sea- based Upper Tier	\$ 14B						
		\$ 12B		12 3	(18)		12 10 (25)	
	Corps Sam	\$ 10B			10 7	(20)		
	Ascent Phase	\$ 9B	9 2	(15)			9 10 (23)	

Costs are FY 95 - 99 TY \$ in Billions from CAIG
 O = Total Program (All Options Include Approximately \$3B for FOT and R&S)
 Y = TMD
 Z = NMD

= Final Options



Ballistic Missile Defense (BMD) Program Review

**Bottom
Up
Review**

Selected Program:

- **Emphasizes theater missile defense development and deployment**
- **Focuses National Missile Defense on technology development**
- **Complies with ABM treaty**
- **Reduces BMD budget by \$ 21 billion**



Theater Air

Bottom
Up
Review

- **The Problem:**
 - **Define Theater Air Capability that Meets Military Need at Affordable Costs**

- **Current Program**
 - **Too Many New Airplanes**
 - » F-22, A/F-X, F/A-18E/F, MRF
 - **Aging Fleet**
 - » A-6, F-15C, F-14
 - **Too Large Force Structure**



Theater Air

Bottom
Up
Review

Decisions:

- Proceed with F/A-18E/F (2001); ground attack upgrades for F-14; retire A-6; cancel F/A-18C/D after 1997
- Proceed with F-22 (2003) with ground attack capability
- Cancel A/F-X, MRF now; cancel F-16 after FY94
- Joint Advanced Strike Technology Program
 - Critical components
 - Technology demonstrators
 - Joint munitions
- Conventional capabilities for B-1, B-2
- Standoff Weapons for deep strike / hard targets



Attack Submarine Program Review

Bottom
Up
Review

Problem:

- Maintaining capacity to build submarines we need

Questions:

- When do we need to build submarines again?
- What is the best way to get the new submarines?

Alternatives:

- Shutdown, then restart production
- Bridge production



Attack Submarine Program Review

Bottom
Up
Review

Decisions:

- **Complete third SSN 21 at Groton, CT to maintain two nuclear capable shipyards**
- **Develop and build New Attack Submarine (NAS)**



Carrier Force Levels, Warfighting Risk and Overseas Presence

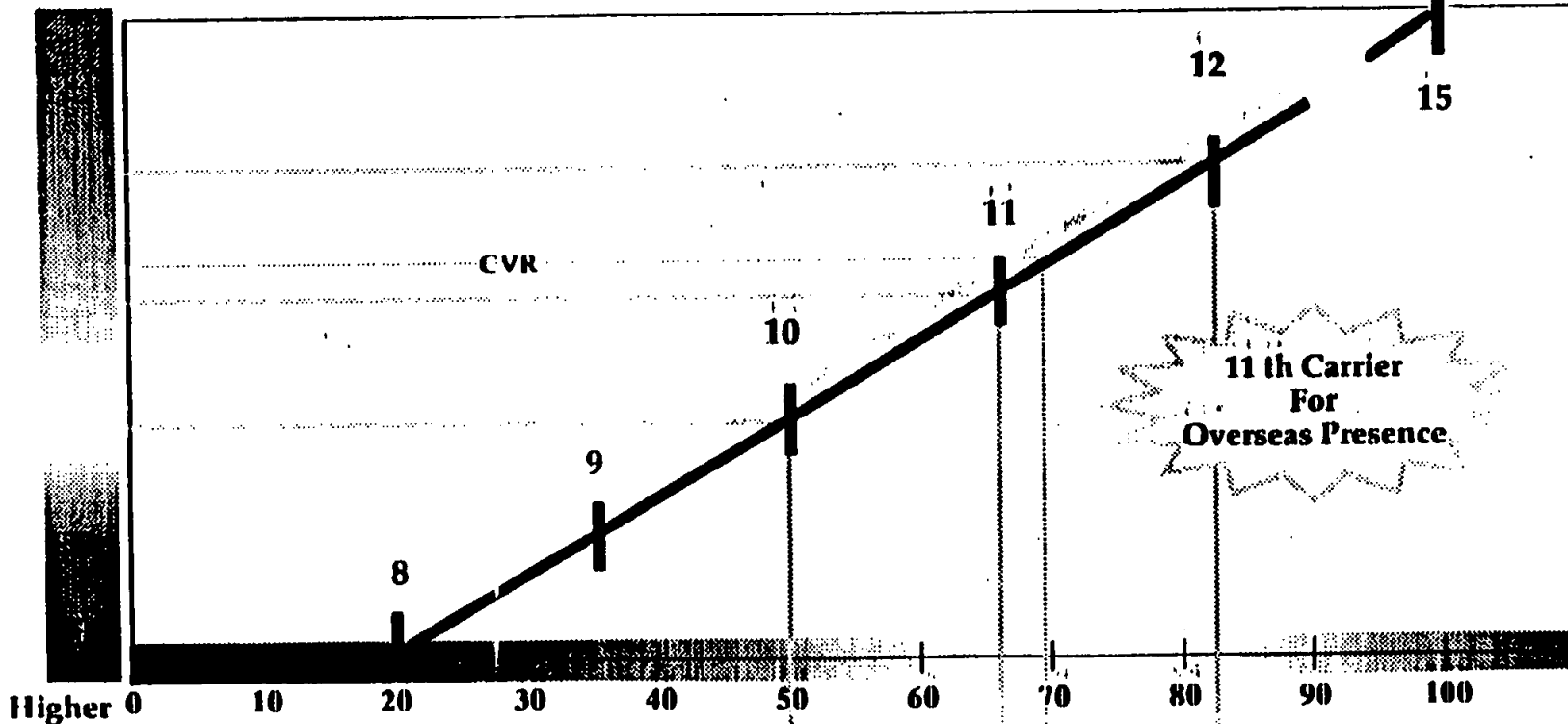
Bottom
Up
Review

Warfighting Risk

Lower

Carrier Force Level

Win 2 Nearly Simultaneous MRCs



Percent Presence in Two Regions with Full-Time Presence in Third Region

Average gap
(Months) in
Other 2 Regions





Bottom - Up Review: Initiatives

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
- Reserve Components
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- Strategic Mobility/Prepositioning
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Modernization Choices

- Ballistic Missile Defense
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- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization
- Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Initiatives

Bottom
Up
Review

- **Cooperative Threat Reduction**
- **Counter New Nuclear Dangers**
- **FSU Defense/Military Partnership**
- **Environmental Security**
- **Dual Use Technology**



Bottom - Up Review: Foundations

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
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OPPORTUNITIES



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- Infrastructure



Infrastructure

Bottom
Up
Review

Eliminate Excess Infrastructure

- Close or realign bases
- Consolidate training, maintenance and supply
- Reduce costly overhead

**Reform the defense acquisition
process**



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

FY95 - 99

- **Provides** additional Army prepositioned equipment
- **Enhances** readiness of Army National Guard combat brigades
- **Retains** additional Marine Corps endstrength
- **Proposes** New Initiatives to meet New Dangers
- **Develops** V-22
- **Provides** precision strike capabilities for F-14, F-22, B-1, B-2
- **Establishes** Joint Advanced Strike Technology Program for next generation aircraft
- **Preserves** submarine industrial base
- **Preserves** carrier industrial base
- **Begins** acquisition reform
- **Properly sizes** support establishment
- **Restructures** Ballistic Missile Defense Program



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

FY95 - 99

- **Reduces Infrastructure**
Reduces about 115,000 civilian personnel
- **Reduces about 160,000 active personnel**
- **Cancels A/FX**
- **Cancels MRF**
- **Cancels F-16 after FY94**
- **Cancels F/A-18C/D after FY97**
- **Retires A-6**
- **Cuts 2 active Army divisions**
- **Cuts 1 reserve Army division**
- **Cuts 3 active Air Force fighter wings**
- **Cuts 4 reserve Air Force fighter wings**
- **Cuts 1 active Navy airwing**
- **Cuts 1 reserve Navy airwing**
- **Cuts 1 aircraft carrier**
- **Reduces carrier force level to 11**
- **Cuts 55 surface ships and submarines**



Bottom-Up Review: What Does It Protect?

**Bottom
Up
Review**

"The men and women who serve under the American Flag will be the best trained, best equipped, best prepared fighting force in the world, so long as I am President."

**President Bill Clinton
February, 1993**

NEWS BRIEFING



Office of the Assistant Secretary of Defense
(Public Affairs)

Secretary of Defense Les Aspin
General Colin Powell, Chairman, JCS
Bottom-Up Review
Wednesday, September 1, 1993

Ms. deLaski: Thank you for coming. Thank you for your interest in the Bottom-Up Review.
Let me explain how this briefing will proceed.

First of all, Secretary Aspin will make some opening comments, and then General Powell will brief the force structure elements. Then Secretary Aspin will brief the modernization issues. I ask you to hold your questions until after they do those things, then they'll be happy to take your questions.

If it's difficult for some of you to see, which it might be, we have provided a hard copy of the slides so you can follow along. The Xeroxed excerpts that you received today are not the complete Bottom-Up Review. You're getting the briefing, though, pretty much that the President got this week. You'll have the full document probably next week.

Let me make one point, though. As we've said, this is a strategy review, not a budget. We don't have dollar figures today. The savings derived from the Bottom-Up Review will be discussed in conjunction with the Vice President's National Performance Review next week.

With that, I give you Secretary Aspin.

Aspin: Thank you, Kathleen. Let me say good day to all of you, and welcome to our briefing. General Powell and I are here to present to you today the results of the Bottom-Up Review.

The Clinton Administration defense program that we're going to talk about today is based upon tomorrow's requirements. It is a product of a comprehensive, broadly collaborative review based upon the real dangers that face America in the new era. It has produced a lean, mobile, high-tech force ready to protect Americans in this new time. General Powell will talk to you about the force structure that came from the Bottom-Up Review. I'll discuss the modernization.

But before Colin begins, let me talk just a little bit about the process and a little bit of the beginning here. Let me start, first of all, by talking about the foundation for the Bottom-Up Review. Those of you who have been following this topic know that for decades this building has focused almost all of its planning -- budgets, force structures, the way we organize our forces -- everything has been focused against the Soviet threat, even to the extent of the way we designed our weapons. We designed our tanks, our planes, our ships with war with the Soviet Union in mind. We now face a time when...this building is in a brand new era. We face a time when that is gone. There is

#515

no more Warsaw Pact. There is no more Soviet Union. So how do we size and shape our defense budgets now? How do you know whether you need a \$100 billion defense budget or a \$300 billion or what kind of a defense budget?

The first step, then, in this Bottom-Up Review, was to ask...go to the fundamental question of what do you need a defense for. We began with the question of what are the dangers that face the United States now in the post-Cold War, post-Soviet world? We came up essentially with four of them. Those of you who have been following the debate are familiar with these, but they are the four that are here on this chart. They are a new nuclear threat, proliferation. We have a different nuclear threat. The old nuclear threat was thousands of warheads in the hands of the Soviet Union. The new nuclear threat is a handful of nuclear weapons in the hands of some terrorist organization or terrorist state, perhaps delivered by unconventional means. So the new nuclear threat, that is still a concern in this new era that we enter into. It's not the old threat where it was possible for both sides to begin war and eliminate life in both countries and maybe a big chunk of life on the planet. What we really have now is a wholly different scale, but in a lot of ways a more difficult challenge, a more unpredictable challenge.

The second thing that we decided that was important, that we needed to have a defense establishment to deal with, was regional dangers. Saddam Hussein, Desert Storm, Just Cause with Noriega -- these are the exhibits. There is still in the world today a handful of bad guys who, while they cannot threaten the continental United States in any meaningful way, they can threaten American interests or American allies or American friends. We need a defense establishment to be able to deal with those kinds of threats -- the regional bullies and the regional threats.

Beyond those two, we start to get into a broader area of national security. What we got into was thinking in terms that this building doesn't ordinarily think of as national security. But in the new world, they are national security. One is dangers to democracy. There is a tenuous movement towards democracy in a large number of countries in the world today. If those were to reverse, or if any of them were to reverse, it would produce a different national security situation for the United States. Clearly, it would produce a different level of spending on defense. So whether or not these countries--and we're talking about in the former Soviet Empire and in the developing world--develop as democracies is important to this building and to our national security. So the dangers to democracy is a third--national security to the United States.

The fourth one really is something that we've never really explicitly addressed before, and that's the dangers of a weak economy. In the short run, the national security of the United States is protected by a strong military force. In the long run, the national security of the United States is protected by a strong economy.

So these are the four dangers that we began with, with the Bottom-Up Review. All of the parts of the Bottom-Up Review had to eventually come and relate to the four dangers. This danger, [points to chart] as you will see as we lay it out, this danger, the regional dangers, is the main thing that drove the size of the defense establishment that we're going to present to you today. The first three -- new nukes, regional dangers, and dangers to democracy have driven the shape of the defense establishment that we're going to present to you today. And this one, [points to chart] the dangers of a weak economy, drive the way in which defense business is being conducted by this establishment that we're going to present. How we get that establishment, how we fund that establishment, how

we deal with that establishment is driven by this one [points to chart]. So this is the size, this is the shape, this is the method of operation. That is the fundamental beginnings of the Bottom-Up Review.

Two more points. The Bottom-Up Review process over on the right hand chart there shows all of the things that are involved in the Bottom-Up Review. It covers force structure, it covers modernization, it covers initiatives, things we have not done before. It covers the foundations. It covers everything. We'd like you to understand that this is a very comprehensive review. It will not just cover the few items that we're going to brief in detail here today, but there will be publications and others to follow up on all of this. It's an extensive, comprehensive review. And all of them driven back to the four dangers that we outlined.

Each one of those dots there, for example, those bullets, like theater air, submarines, under the modernization choices; ballistic missile defense, theater air. Each one of those had a working group in the Pentagon. Each one of those had a separate working group that was working on those issues, and there are other working groups that were not listed on the chart there. But it's a very extensive review.

Over here, the chart shows that it was, as the previous statement implies, a collaborative process. These are all of the parts of the building that were involved in this thing. Every one of those working groups had mixed people from various parts of OSD and various parts of the uniformed services -- from the services themselves, from the JCS. It was a very extensive, collaborative effort. This is just the collaboration within the building. When we got the stuff finished within the building -- tentative results -- we would take it across the river. The President and his staff were continually updated as this thing went on. We had a chance to get his ideas, his reaction to things. We'd come back and adjust as it was going on. So they were intimately involved in the process from the beginning -- the White House staff, the President himself was involved in the process.

Let me tell you what we're going to do here today as far as the presentation that Colin and I are going to do. There will then be a followup briefing that will go into some more detail on some of the others. But Colin will cover the force structure options over there, again, looking at the right hand chart. Colin will brief the force structure options, because that's the heart of the matter. That really is the key to the whole thing, is the force structure options that we have to have, that we're laying out here that we need to meet the new dangers.

I will talk about the modernization choices, and out of just necessity, it will be relatively short. I will pick a few of them, and we'll go through others. We will not have a chance much to go into the initiatives and the foundations, but perhaps we'll get a chance to do that at a later point. There will be other chances for you to hear about that and, ultimately we'll be handing out more documents over the next week or so.

Let me, at this point, introduce Colin and let him talk about the force structure options.

General Powell: Thank you, Mr. Secretary.

Let me begin by echoing a point the Secretary made, that this was a very, very collaborative effort. The Joint Chiefs of Staff, the Joint Staff, and the service staffs worked very closely with the new appointees in Mr. Aspin's organization--on his team--and we have been in sync with them step by step throughout this entire, almost seven-month process, and I'm very, very pleased at the level of collaboration that has existed, and I think it will be reflected in the very, very fine product that we are beginning to unveil today.

Let me begin by giving a little bit of a tutorial about what an armed forces is all about. Notwithstanding all of the changes that have taken place in the world, notwithstanding the new emphasis of peacekeeping, peace enforcement, peace engagement, preventive diplomacy, we have a value system and a culture system within the armed forces of the United States. We have this mission -- to fight and win the nation's wars. That's what we do. Why do we do it? For this purpose -- to provide for the common defense. Who do we do it for? We do it for the American people. We never want to lose sight of this ethic. We never want to lose sight of this basic, underlying principle of the armed forces of the United States. We're warriors, and because we are warriors, because we have demonstrated time and time again that we can do this for that purpose for the American people, that's why you have armed forces within the United States structure.

At the same time, because we are able to fight and win the nation's wars, because we are warriors, we are also uniquely able to do some of these other new missions that are coming along -- peacekeeping, humanitarian relief, disaster relief, you name it, we can do it, and we can modify our doctrine, we can modify our strategy, we can modify our structure, our equipment, our training, our leadership techniques, everything else to do these other missions. But we never want to do it in such a way that we lose sight of the focus of why you have armed forces -- to fight and to win the nation's wars.

For most of the last 40 years -- and almost all of my career -- the war that we focused on, that conflict that we were so concerned about, would come out of the Cold War. It was a name we didn't use very often because it was too scary -- it was called World War III. But for almost all of my adult life, I worried, in one way or another, about World War III. The Cold War, World War III was going to be something that engulfed the entire world. As you think back at some of the assumptions we worried about all during the '50s and the '60s and the '70s and the early part of the '80s, about a Soviet Empire here that had tentacles that reached around the world, it was all linked, and this war could begin anywhere. It could begin in the Middle East, it could begin in Northeast Asia. It could, perhaps, begin even in our own continent. But it had a link. It had an empire linkage to it, and we had to plan that we might be in conflict with an empire that had worldwide ambitions, worldwide designs, a worldwide strategy, and the ability to project power around the world. Thus, we worried about the Atlantic Ocean. Just ten years ago, we used to worry about Soviet submarines off the coast of the United States, just off of Norfolk, that could launch missiles that could strike Washington in eight or nine minutes time. We used to worry a great deal about our ability to project power across the north Atlantic Ocean as the Soviet Union's navy was being built up. We used to worry about our ability to defend Central Europe. We used to worry about what we might have to do in the eastern part of Russia as they undertook action against our interests in that part of the world as part of this worldwide conflict. That was the guiding principle, the guiding assumptions relating to this kind of a war for most of the last four decades. That's all now gone.

It's gone, and let me kind of describe what we used to worry about, where it has gone, and what we have to worry about now as a way of segueing into the new strategy and the new force structure.

That Soviet Empire has now been replaced by something quite different -- an Iraq, a Korea, other demons and dangers that come along of a regional nature. They are no longer linked, but they are nevertheless, the source of potential conflict, places where the United States armed forces might have to go and fight and win.

Some of you may remember one of my more forgettable lines, "I'm running out of demons," three years ago. Fortunately, history and central casting has supplied me with new ones along the way. (Laughter) Saddam Hussein, Mr. Aideed, General Malatich. What we've discovered is that that uncertainty we were worrying about a few years ago is still there, and from time to time these dangers come along. They're the dangers that Secretary Aspin was talking about under his second catalog of regional dangers.

You may recall when I became Chairman four years ago, and for many years before that, we used to argue endlessly about how much warning time we had -- whether it would be ten days or 14 days before World War III began in Central Europe. Many of you here in 1989 wrote long articles when we decided to change it from 14 to 21 days -- a major change in strategy at that time. Was it 14 or 21 days? We haven't talked about that in years because, with the collapse of the Warsaw Pact, the collapse of the Soviet Union, we are not talking about regional conflicts that may break out in one day's time, or it might be something that sort of develops over a period of time, and it might take years in terms of this thing coming to a point where United States armed forces might have to get involved. So it requires forces that are able to go instantly and the ability to develop larger forces for a different kind of conflict...in order to relate to this new world and pay the peace dividend that President Clinton has promised to the American people. We can do that, and that's what we're trying to do.

So the world of the Cold War has now gone from this set of assumptions to that set of assumptions, and it really kind of looks a little bit more like this in cartoon fashion.

It seems to us that it is essential that the United States armed forces, in the name of the American people, be prepared to fight and win a major regional conflict in this part of the world -- Southwest Asia. Why? Because we have alliances there, we have vital interests there, the oil of the Western world is located there. It seems to be a sound strategy, based on sound political and military principles that we always have the wherewithal to project power this distance for the purpose of fighting and winning against any regional aggressor who might surface in that region of the world.

Similarly, we think we should be able to do the same thing in Northeast Asia. That one's clearer. North Korea has not changed its stripes -- my one remaining demon that I was hanging on to a few years ago. They have not changed their stripes. Our interest is so great in this part of the world that we should have the ability to do this as well.

We also believe it is sound, wise and prudent, for us to be able to do these two near simultaneously. Why near simultaneously? Why not at the same time? The same time is probably a little too expensive and it's probably unlikely. Since these are no longer linked by the Soviet Empire

and the Cold War, it's most unlikely they would occur at the same time, and it would be very difficult to buy the lift assets necessary to move our forces to both places at the same time. But we think it's wise to have sufficient force to deal with them almost at the same time, near simultaneously, so that we can shift our lift according to how these crises unfold.

Well, is it really likely they would happen at the same time? Probably not. But while we are committed to either one of these, it would be irresponsible, in our judgment, and unwise in our judgment, not to have sufficient capabilities to deal with the second, thereby, perhaps encouraging the very conflict we do not want to see occur. So this is a fundamental, underlying principle of President Clinton and Secretary Aspin and the Joint Chiefs of Staff strategy statement for Bottom-Up Review, being able to deal with two major regional contingencies or conflicts near simultaneously.

At the same time, we have to keep in the back of our mind that while these are the two main events, lots of other things are going on in the world. We can't predict where the conflict might be. We have some difficult situations right now in the area of the former Warsaw Pact and other areas in Central Europe, Bosnia being a prime example. Are we going to get involved in Bosnia? This is a situation that is before us right now as we see what we might have to do in peacekeeping activities -- not necessarily a conflict, but a draw on our forces. A significant commitment of forces, perhaps, to deal with something like that, or elsewhere in Central Europe. We have to keep our attention focused on our own hemisphere.

So two major regional conflicts, be able to deal with them near simultaneously. Also to have sufficient capacity if something else comes along.

That's nice strategy, but then you have to convert that into form and substance and structure. The way we do that is through a series of models and war games and military analyses and discussions with our political leaders as to what is an acceptable risk or an unacceptable risk.

The way we go about it is to take this major regional contingency, Southwest Asia, and take a look at what might happen. In this case we have postulated another attack sometime in the future from Iraq into Kuwait or perhaps into Saudi Arabia. This really is a surrogate. We don't really know if anything like this would ever happen again. We don't know. But there is such instability in this region of the world. There are a number of nations that are arming themselves. There are a number of nations who might not have interests that are favorable toward our friends in the region and toward our interests. So let's use this particular conflict in our modeling and our war games as a surrogate for what might happen in this region.

Let's do the same thing in Northeast Asia, although it's a little clearer as to who that potential enemy might be, and we've been studying him for 40 years. So we use these two scenarios, and we run war games, we use models to make judgments about what kind of forces are necessary to fight and win this battle. To fight and win this battle, what kind of infrastructure is necessary to support it, what kind of lift capacity is required to get your forces there, what kind of reserve is necessary so the nation isn't stripped bare, and all of the other things that go along with it.

The point I want to make with respect to this little cartoon, Country X, is that history teaches us we never really fight where we thought we were going to fight. We fought Desert Storm with a European Army. We used European tactics. Desert Storm was that Cold War battle that

didn't come with trees and mountains. We got a nice desert, and we got a very, very incompetent enemy to work against. But history teaches that the forces you buy, based on these reasonable assessments, might well be used for a conflict you never dreamed of. The force we are buying now, the plans that the Secretary and the President are making now are for a force that will be with us for years to come. It is a force that may well be employed a year from now, three years from now, or long after President Clinton has completed his term of service and Secretary Aspin has completed his. The force we have now, to a large extent, is inherited from our predecessors. We always have to be thinking of the future, the unknown, the uncertain, and I think that's what Secretary Aspin has clearly done in the guidance he has given us for the Bottom-Up Review.

Let me just give you a quick tutorial on how we actually run the models. This part of my chart out here, this shows the two regional contingencies. This out here is a period of strategic warning. We, hopefully, can see a conflict coming out here somewhere and start to do something about it. Maybe we can do something here, when we are quite sure something is about to happen. We can begin deploying forces before a conflict actually begins. When that conflict does begin, the deployment and sustainment of forces takes priority as you go through the phases of the campaign. The first thing you have to do is to halt the invading force.

For example, in Desert Storm we didn't know if the Iraqi army was going to continue through Kuwait and go down into Saudi Arabia. We couldn't be sure. Nobody was willing to bet the farm on that. Answer -- you send in the 82nd Airborne Division, you send in the 1st Tactical Fighter Wing, and you plant the flag of the United States of America in Saudi Arabia. It was a very thin force, many of you will recall, but there was a lot more coming behind it and, at that point, we had planted the flag of the United States of America. We the people were coming to fight and to win eventually.

Then you halt the invading force. Through campaign planning, you build up your forces, you use air power, air power with great precision and skill to attrit away the enemy force. But at the same time, you continue to move forces so that you can eventually seize the initiative away from the enemy, complete the battle, and provide some post-war stability. Post-war stability isn't thought about that much, but it should be. After World War II, post-war stability took the form of occupation armies in Germany and Japan until such time as we could turn it over to newly elected democratic leaders. After Korea, we stayed there, and we're still there. That's post-conflict stability. Now, after Operation Desert Storm, we have forces in the region for post-conflict stability.

We are hoping that these will never occur simultaneously, but we feel that our planning provides the forces necessary to do these if we've got the necessary gap between the two conflicts occurring so that we can use our lift assets to move the forces first to here, then to here, and then sustain them both and get ready for post-conflict stability.

Let me describe now the force options that we examined to see what we needed to deal with the strategic situation I've just put forward to you. Let me begin on the right side of the chart with a force, let's call it the base force. The base force generally had as its underpinning being able to win two nearly simultaneously major regional conflicts and some more capacity beyond that. It consisted, as you well know, of 12 active, eight reserve Army divisions; the 12 carrier battle groups; the Marine Corps component; and the Air Force component that you see here. Pointing out that the Air

Force really is...it gets a little bit of short shrift in this kind of display because it only shows fighter wing equivalents where there is a lot more to the Air Force, the lift capacity of the Air Force, and a lot of other things the Air Force does. It's just a little shorthand of laying out force structure in manageable ways.

The other end of the extreme, we listed the forces we felt through war gaming would be able to deal with one major regional conflict, and we thought eight divisions with six reserve division equivalents as backup so that it could be mobilized and brought on-scene in due course, with only eight carrier battle groups, still a very robust Marine Corps, and a much smaller Air Force, would give us one major regional conflict capability with some left over.

We didn't find this to be an adequate force. We didn't find that this would serve our interests for the reasons that I think I've laid out earlier.

What we then did was to look at two options in the middle, where we came away from the current force projection because of the second revolution that Secretary Aspin talks about frequently -- not only the collapse of the Cold War and the Warsaw Pact, but the total collapse of the Soviet Union; with something of a third revolution as these new regional conflicts have come along. So we can come back from this force level, and we looked at options in here.

The difference between two and three, first of all, force enhancements that I will show you in a moment. These force enhancements give you the ability to erase this hold up here [points to chart]. It gives you the ability to have a readier force that can deploy more rapidly to the two near simultaneous regional conflicts. The other significant change you'll see here is one more, or two more carrier battle groups, and I'll describe that in a moment. But these are driven as much by our force presence needs around the world as they are by our warfighting needs around the world.

The big change [is] anticipated in Army Reserves, particularly the National Guard part of Army Reserves. We usually have looked at that capability in terms of divisions -- National Guard divisions. The combat part of the National Guard. We are going to shift to a focus on enhancing the readiness of brigades rather than enhancing the readiness of entire National Guard divisions. The simple reason is it takes too long. We want to shorten the time by focusing our enhanced readiness activities on brigade-sized organizations. Fifteen is the number we're looking at. We're still examining this number. It's not locked in yet, but the important teaching point here is we're moving from a focus on divisions being ready to a focus on smaller-sized National Guard units being ready.

Let me talk to these force enhancements here [points to chart] so you can see what the difference is between these two options. Additional Army pre-positioned equipment. You're familiar with the Army's heavy brigade we're putting afloat. That allows you to move forces to the area of conflict -- on the left side of that chart I showed you -- during periods of strategic warning without committing yourself. You just move more pre-positioned equipment, an Army heavy brigade, as well as the existing Marine maritime pre-positioned squadrons. Additional airlift and sealift [is] being purchased. We have recently issued the Request for Proposals for new RO/RO ships to be built, as well as to buy existing ones in the commercial market and configure them for military use.

Improved antiarmor and precision-guided munitions for the Air Force and the Navy, so that during that yellow part of my little cartoon earlier, when we were actually interdicting the force, we can do it much more effectively than through the use of ballistically dumb bombs.

More early arriving Navy air. We're going to reconfigure our naval aviation so that, if a carrier is at a point of conflict where it needs additional strike aircraft and fewer air superiority, air defense aircraft, we will bring out additional F-18 squadrons and, ultimately, the F-14 variation, the Tomcat, would replace some of the air superiority fighters aboard the carrier.

We're going to improve Army National Guard combat brigade readiness, and I've touched on that already. Improve Army Guard and Reserve support force readiness.

We're going to do a lot more with command, control, and intelligence assets, in focusing that and being able to provide that to the warfighters. We've got a lot of initiatives underway there.

And, as I'll discuss in a moment, we are going to retain some additional Marine end strength. As you recall, the base force would have taken the Marines down to 159,000. But what we haven't been able to do is get rid of all the requirements that the Marines have and all the commitments that they have. They are busier than they have ever been. So we are going to level that out at 174,000, and I'll describe that in a moment.

That's how you come up with the warfighting structure, but there are other things we have to do. For example, overseas presence. A lot of these folks are part of the warfighting structure, but they serve other purposes as well. You see them here: display U.S. commitment to deter regional aggression just by being in the theater; prevent regional arms races by being there in strength, saying it isn't worth having an arms race with this guy. We will win, and we will fight, and beat you if we have to. Improved coalition effectiveness by our presence, by their learning from us, by their exercising from us, and providing initial response to the regional crisis forces that would be coming over.

In Europe, the President and Secretary Aspin have reaffirmed 100,000 troops will be the number coming down from; remember, 315,000 troops just four years ago. In East Asia, about 98,000 troops, keeping our two brigades in Korea; an Air Force wing in Japan, I think you're familiar with. Southwest Asia, we have roughly 20,000 troops pre-positioned there now. We will also have periodic deployments and exercises with our friends in the region to show this commitment to their welfare. And, of course, our global maritime presence that we have around the world in the form of carriers and other ships, and we're doing some very, very exciting, adaptive force planning so that you see something other than just the traditional large deck carrier battle group. We're making the battle group smaller, and we're doing more creative things and using the unique capabilities of the aircraft carrier.

Of course there are other things we have to do. I think you're familiar with all of these. In the four years that I have been Chairman, as you go through all of these, we've done about two dozen of them. Sometimes they are rather simple, such as moving food supplies to the Soviet Union two winters ago; sometimes they are real tricky such as evacuating the embassy in Mogadishu in 1991, just about the time we were getting ready to start Operation Desert Storm. All of these will

keep coming along, and we have to make sure that we have the capacity to deal with these kinds of unique operations.

Let me use one wonderful chart that you're all going to just love, to sort of summarize. If you can't read it, I think you have a handout. But this kind of gives it to you in a dynamic sense.

Let's start here. This is what the armed forces of the United States are doing today. We are providing overseas presence, Korea, Japan, Europe, Southwest Asia. We're doing democracy activities. You find men and women of the armed forces around the world working with our friends who want to learn from us. One of my great examples is we have an Army chaplain who is working with the Czech republic in helping them put together a chaplain, a religious program for their armed forces, to show them what we do to provide for the spiritual well being of our armed forces. Those types of things will take on greater importance? Why? For the third reason that the Secretary mentioned, to help preserve democracy, to deal with that danger that he talked about a moment ago. Our forces in Europe that are providing forward presence are spending more and more of their time traveling into the nations of the former Warsaw Pact to teach them, to learn from them, to exchange experiences and to help get them to understand the role of the armed forces in a democratic system.

Peacekeeping, such as our hospital in Zagreb, our troops in Macedonia, what we're doing in Somalia which is a combination of peacekeeping as well as some low intensity conflict, being ready for lesser regional contingencies. Humanitarian assistance, disaster relief. Strategic lift. Part of our air fleet is always at work supporting our troops in Mogadishu or flying into Sarajevo.

Then in the United States you have not only the foundation -- our bases, camps stations, training installations, all of that, our depots. You have the general purpose forces ready to respond to the crisis that comes along. And through it all, you have your strategic nuclear deterrents out there because we still do have 28,000 nuclear weapons in the former Soviet Union that we have to eventually deal with.

Along comes the first major regional crisis -- either the East one or the West one. Immediately, we begin to flow forces that are available in the United States. If you remember my cartoon, I moved Europe from the Cold War center out of the picture, put the United States in the center of the picture on that second cartoon, because the whole focus in the future will be less overseas presence, more ability to surge forces out from the United States. So the forces begin to surge.

We also begin to call up reserves. In the total force concept, the reserves are going to be an integral part, even though they are also going to be taken down in size. They will go pretty much from day one as they do now -- part of our total force effort. The whole force begins to flow to deal with major regional contingency one; we call up additional reserves to hedge your bets in case the second one comes. You may have to cut down on some of these other activities. Strategic lift starts to surge, we call up the Ready Reserve Fleet, go to MRC-1 [Major Regional Contingency One]. Then here's your near simultaneity when MRC-2 comes along. We continue to flow.

What you lose here as you go down in size is reserve capacity to deal with anything else that comes along. But the option that I described earlier, the option three that you saw, we believe gives us the ability to handle these two MRC's and have a little bit left over without putting the nation at

any risk. It's an option that the Chiefs are very, very comfortable with, and the Commanders in Chief of the unified command are very comfortable with. You win MRC-0, you then go into post-conflict stability, what we talked about earlier; and then you essentially reposition yourself to get ready for what might come in the future.

This kind of summarizes the sort of philosophy we used in the development of the Bottom-Up Review. We looked at this chart over and over and over again and we debated, what do we need for all these things? How do they link in with the four dangers that the Secretary spoke to? It was kind of our little report card on ourselves throughout the past seven-month period.

What does it all look like when you're finished? Here it is. In FY90, the Army had 18 active divisions and 10 National Guard divisions. As it was coming down to its base force level of 12, it is now at 14 going to six. The plan was six National Guard plus two cadre National Guard divisions. The Bottom-Up Review concludes that we can go to ten active divisions and be able to deal with the situation I described earlier. We put it up here as five National Guard division equivalents, but it's within that five Guard division equivalent that we're talking about the enhanced readiness brigades. How the division headquarters would be used to support those enhanced readiness brigades, we are still discussing and debating.

The Navy, from its high of roughly 15 plus one carriers down to 13, is going to 11 plus one. Eleven full-up active carriers outperforming force presence missions. This 12th carrier will, for the most part, stay off of the East Coast of the United States; be manned at about 80 percent active, 20 percent reserves. It will use reserve training wings to come and go. It can be surged quickly and sent somewhere if need be. That's the beauty of it. We get this 12th carrier at much, much less expense than one of the other 11 carriers.

The overall size of the Navy continues to decline. Remember the first cartoon, the North Atlantic. The North Atlantic is gone. There is no Soviet navy out there that's threatening us. If we had to go back to Europe it might well be with the assistance of the Soviet navy rather after resistance of the Soviet navy. We can make prudent reductions in the size of the Navy, very significant reductions in the overall size of the Navy, preserving, though, that unique capability that comes with the aircraft carrier. We're looking for more flexible ways to use that unique capability, and that's why I think it is a very sound decision to keep that number fairly robust.

The Air Force will continue to go down to 13 active fighter wings and seven reserve component fighter wings.

The Marine Corps end strength I've already touched on, coming down from its 1990 high of 197 down to 174 -- a significant reduction in the size of the Corps, but because they are so busy in this very calm, new world order we expected, it isn't prudent to take them down any further, and so this is a case where we are holding and building back up from previous decisions.

Strategic nuclear forces. Not much change to the previous plans. This will be the subject of intense review by the Secretary and his staff and the Chiefs in the months and years ahead.

There you have it, there's the force structure associated with the Bottom-Up Review, and I think I've covered adequately the strategy that led to the force structure. I'll turn it back over to the Secretary.

Secretary Aspin: Thank you very much, Colin.

Let me more briefly cover some of the modernization issues here, because this is the next item here. As I say, there are a whole bunch of things here to cover, but under the modernization choices, I'll talk about ballistic missile defense, and then more briefly, theater air, submarines and aircraft carriers. And the rest of it, I'll wait and see if you have any questions on it. But let's start with the ballistic missile defense and where we came out on that issue.

Here is the key considerations for all of the modernization choices that we undertook. These are the factors that went into our decisions as to which choices, the options we looked at, and which ones of the options did we pick. The only thing I would point out to you is the industrial base here. That's new. Previous reviews of modernization issues probably did not give the same weight to the industrial base that we did. So I think that one of the things that I think is important here to point out is that we do give some weight to the industrial base considerations in our choices.

Let's start with the ballistic missile defense program. Here are the problems, as you see, and the alternatives for how to deal with it. Basically what we have is a near-term problem of theater ballistic missile threats to the United States allies, friends, and American forces stationed abroad. That's here and now. That starts from Iraq. That we saw in Desert Storm. That is a near-term threat right here.

A longer-term threat is the threat to the continental United States from intercontinental ballistic missiles. That one depends upon the development of that capability by a whole bunch of countries that are looking at it but do not have that capability now. So there is a need for a theater missile defense right now. There is a need for doing some research, at least, on a national missile defense program.

The other part of it, of course, is that we are in an ABM treaty with the Soviet Union, so whatever option we pick here, whatever combination of things we pick here, it must be consistent with the ABM Treaty.

So there are two ways to proceed. One is the question of how much theater missile defense you get, and the second is the question of what you do with the national missile defense -- all of it consistent with the ABM Treaty. Let me show you a chart that's better than Colin's. I've got some charts that make that thing that Colin put up there look easy. (Laughter) Some of them I'm not going to show you, but there are a couple in here that are really good. This is a nice chart. This is much better than Colin's chart.

What it has here is the theater missile defense on one axis, for you mathematicians, and the national missile defense on the other axis. This is the Y axis, this is the X axis. Do you remember that? (Laughter)

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Theater missile defense. In the theater missile defense, we have a core program. All of the options under the theater missile defense have the core program listed here. Then it builds more theater missile defense into the program as you move up. This is a \$9 billion program, \$10 billion program, to \$12, and here's a \$14. So the higher you are on this chart, the more robust theater missile defense program you've got.

On the other hand, you've got a series of options here on the national military missile defense program. You can have two versions of a technology program -- one with Brilliant Eyes, one without it; you can have a tech demonstration program which would be more expensive; and then you've got acquisition program options which are even more expensive yet.

The bottom line is, you can pick a number in there. Or pick one of these boxes is what the Bottom-Up Review had to do, pick somewhere in the boxes. Basically, the philosophy I think we came to was that the right place to be is up in here; with a more robust theater missile defense, but a fairly research-oriented national missile defense. The option we picked was that one.

The program that we picked is the box there. It's the selected program. It emphasizes theater missile defense development and deployment. It's very robust, it's got that whole core program plus a good chunk of the other stuff in the theater missile defense. It focuses on national military, on technology development, is the \$3 billion program with Brilliant Eyes. Here, it's a \$12 billion theater missile development and \$3 billion national missile... plus a \$3 billion overhead, it's an \$18 billion program. It complies with the ABM Treaty, and it reduces the ballistic missile defense budget by \$21 billion because it compares with the current [one] in the base force, in the Bush budget, the FY95 to 99 budget, the \$39 billion. This is an \$18 billion option. You can pick others. You could pick a \$15 or a \$20 or a \$23 or a \$25. What this shows is, it shows you in more detail than I'm going to on the others, but if you're interested in it, what we looked at, what kind of choices we were looking at, what considerations drove us to what we wanted to do. Anyway, what we picked was the one that is \$12 billion over the five-year period of a theater missile defense program, and a \$3 billion national missile defense program.

Let me then go on. We will not go into that kind of detail on the other programs, but I'd just like to go, very briefly, in terms of the theater air and the attack submarines and the aircraft carriers just briefly, and then, if you've got questions, we can go to those on the other weapons.

Let's look at the theater air. The problem with the theater air is to define the theater air capability, here it is, and here's the problems. The current program has these kind of problems associated with it. The question is what are we going to do and what did we come up with... I won't go through the same discussion of the analysis, but let me just jump to the bottom line here of the option that we picked. Here is the option that we picked. Those of you who have the pieces of paper in front of you can take it and look at it. I'd just like to call attention to a couple of issues here on the options that we picked.

The first thing about these options that we picked is that we concentrated very heavily on the near term problems, the problems that are most acute right now. So point number one, we're... focusing very carefully on the near term problems.

Second, I'd like to point out this line here -- the joint advance strike technology program. We are looking towards developing the commonality in the next fighter that we will develop, between the Air Force and the Navy. All of us in the Pentagon -- in the uniformed services and in the civilian -- have been in the Pentagon before, and we know the anguish that that produces. And indeed, the whole McNamara TFX fight of the past.

What we tried to do is to take a different approach to this, and this really is a unique attempt to solve the problem. What we are doing is seeing if we can't get components which we can make common to the two planes, to the Navy plane and the Air Force plane. Try and make components common. Where most of the money is in the components -- the avionics, the engine, what have you. Try and make them common, even though the silhouette of the plane may look differently. So you drive the commonality in driving at the commonality of components. That's the approach -- to try and save money by maybe getting 70, 80 percent of the components of the Air Force plane and the Navy plane common. We'll save a lot of money even though, as I say, the silhouette may look differently, and the silhouette may be very important for the Navy's purpose of flying it off of a carrier or whatever. This is a fairly brand new approach, a very interesting approach.

Two more things to point out before we leave this. One is that we're going big time into making the nuclear bomber force, the B-1 and the B-2, conventional capable. Wholly refocusing where we're going with those bomber programs, and to make them part of this theater air solution, is going to be to take the strategic assets from the old Cold War nuclear scenarios to see whether we can make them into silver bullets, use them as silver bullets or whatever in terms of dealing with theater air.

Finally, to focus not just on the platforms, but on the standoff weapons that come off of the platforms. In other words, some of these platforms we're not going to change as fast as we would like to have them changed. To keep the capability there and to have the capability to deal with these deep targets off of the carrier, we're going to have to improve the standoff weapons. So there are two ways to deal with it. One is to deal with the weapons, the other is to deal with the platforms. In cases where, because for one reason or another we can't deal with the platforms, or at least certainly not right away, we're looking at dealing with the problems with the standoff weapons. That's theater air.

Let me do the submarine program. The issue of the submarines is, of course, essentially at its core an industrial base issue. The fact of the matter is that we're not going to need the same number of submarines in the future -- maybe down to half the number of submarines. We have 81 submarines in the inventory now. In the long run we're looking at maybe in the range of 45 to 50 submarines. What that means is that you just don't have to build a submarine for awhile. What happens to the industrial base in the period in which you would not be building submarines?

So these are the questions. The alternatives here are two. We can shut down the program and then restart it when you need to build it -- there would be a gap then. You've got a gap when you don't need to build submarines. You can shut something down and then start it up again. Or you can put something in the middle in there and bridge the production between where we are now on submarines and building the new submarines that we will build.

What we have done is we have decided to do the bridge option. We have planned to complete a third submarine, a third Seawolf at Groton, Connecticut. That maintains the two nuclear-capable shipyards. It also would be...the other part of it is, of course, to develop and build a new attack submarine which would be part of the next generation of submarines. Again, I've just listed the problem and listed the solution that we picked without going into the analysis. If you're interested in the analysis, we can go into that.

Here's my other chart which is pretty good. What it talks about is, Colin pointed out earlier, the number of carriers that we're going to buy. The point that this chart makes is that the number of carriers that you want is a combination of the two MRC's, the fighting of the two MRC's, but also the function of presence. In other words, you need aircraft carriers to fight and win two MRC's -- major regional contingencies -- as Colin was explaining in his presentation.

How many carriers do you need to do that? What we looked at and what we came up with was, frankly, a number like 10 would probably do it. But the number of carriers that you need to fight and win two nearly simultaneous MRC's -- an MRC West, an MRC East -- ten is probably a number that would work for you. But there's a second consideration. That is a consideration of carriers for presence in peacetime. As Colin also pointed out in his part of the presentation, that's a very important part of the use of carriers, is to show the flag, to be able to project power, to be able to get power, aircraft power to places where we don't have access to airfields. It's an important part of our present strategy.

With the demise of the Soviet Union, what we have discovered is that the presence requirements drives the number of aircraft carriers more than the major regional contingencies. If you had just major regional contingencies, you would probably buy ten aircraft carriers. If you are looking at the need for presence, it's one that makes attractive having more than ten aircraft carriers. This shows you the numbers down here at the bottom:

If, for example, you had ten aircraft carriers, what it shows is that you have... You have three regions of the world -- the Med, the Indian Ocean, and the Pacific -- that you need aircraft carriers present. With ten aircraft carriers in the current kinds of ways they get deployed and the time on station, et cetera, you would have full, 100 percent presence at one of the three places, but half, six months out of the year, 50 percent of the time it would not be covered in the other two. If you get up to 11, you would have 12 months of the year coverage in one out of the three, and eight months coverage in the other two. If you get up to 12 you do a little bit better than that. Those are the numbers.

Looking at all of this, looking at that plus the dollars and all of the other things, we came to the conclusion that Colin had in his force structure presentation, to have an 11 carrier force with a reserve carrier as the 12th carrier which is essentially a training carrier, but it does give you a little bit of presence in time of an emergency, and maybe even a little war fighting in time of an emergency.

That's essentially the modernization choices. There are more than are listed here. We shouldn't go through the whole proposition here, but there will be ample opportunity to ask us or ask [deleted and Admiral deleted], who are going to be available to talk to you, and we'll have more that we're going to put out.

Just to talk very briefly about the rest of it, you've got the initiatives [points to chart]. You don't want to spend any time, but here are the initiatives. These will add money to the defense budget, but this is the new world, this is doing something about democracy, the concern about the reversal of reform and the economic security issues. These are wrapped in this part of the program. I won't spend the time to go through it, but that's where these are. As you know, this building has been very much involved in a whole bunch of those issues.

The foundations are important.

The readiness, as you all know, is one of the things that we are very, very anxious to maintain and to maintain the quality of the readiness, and that, of course, means money. There's two ways that you can get some money out of the foundations, and one of them is extraordinarily important. And that is that we continue to downsize the overhead -- the infrastructure, the bases -- that as the forces go down, we not get top-heavy on the infrastructure. It's incredibly important. It's very tough to do. It's a very difficult part of this thing, but this is absolutely critical.

Reforming the defense acquisition process, more about that from this building, Bill Perry and others, later. But this is also a very important part of the overall problem. Again, just to show you the comprehensiveness of the exercise.

Finally, let me do this. This is the bottom-up review. What does it change? It's the chart that tells you how this is different from what was scheduled before, what was different from the base force. The red stuff are reductions, the green stuff is additions. And I'd just let you look at it. You all got a copy of the chart in the handout. It is essentially at the core of the bottom-line difference. When you look at everything that we have done with this bottom-up review and then just take it over and set it alongside the base force, these are the differences that come out [points to chart].

And as Colin was explaining, the base force was kind of a transitional budget. It was put together in a different era. It was put together after the Warsaw Pact had collapsed but while the Soviet Union was still a major threat, and so of course it's going to look differently than this. I mean they still were looking very much at the possibility of going to war with the Soviet Union. We think that Soviet Union now, thanks to a few more years of looking at it... There are certain circumstances under which Russia could become a major regional threat, but it's hard to see how that Humpty Dumpty called the Soviet Union ever gets put back together. And that changes everything. That does change everything. And it allows us to make the kinds of changes that you see in these two charts.

Let me put this over here, and we'll finish just with the quote that Bill Clinton had said in 1993: "The men and women who serve under the American flag will be the best trained, best equipped, best prepared fighting force in the world so long as I am president." And we have taken that to heart. That is exactly what we had in mind, exactly what we were dealing with when we did this.

Thank you all very much, and let's -- Colin, do you want to come up and we'll answer some questions.

Q: Mr. Secretary, President Clinton, you and the administration have made much of the defense industrial base. You touched on it briefly here. The previous administration went under the theory that if you cut arms programs or hurt industries that it would seek its own level, that jobs would be repaired. The only concrete example that I can see here is the fact that you're building an extra billion-dollar Sea Wolf submarine, which you, as a member of Congress, many other congressmen and even people in this building questioned the need for. Could you go a little bit into about how you're going to maintain this artificial industrial base, if you would, at high cost to the taxpayers in order to...

SEC. ASPIN: Let me tell you a little bit more about the industrial base because it goes beyond the issue of the Sea Wolf submarine.

I think that what we are talking about here in the industrial base is the relationship between the US defense budget and the US economy and what role we can play in both promoting an economy and in strengthening the defense of the future. And let me give you some examples.

The industrial base...as we downsize the defense budgets of the United States, we're going to free up some resources. When you free up those resources, the question is what do you do with them? This administration, the Clinton administration, is going to be much more proactive, much more aggressive about finding ways to employ those resources in commercial products. We've got a big deal going on base closings and other things, so we have a big program for it. The previous administration was a little more laid back about being aggressive about doing that, under the grounds that eventually these things would find their own employment et cetera. So one difference between us on this industrial base issue is to be more aggressive about employing the resources that are freed up.

Secondly, we are much more concerned, as you say, about the ability to produce weapon systems in the future. In other words, what kind of a base are we doing as we go through this downsizing?

And going through the period of the downsizing is the most difficult, because once you hit a constant base, you'll be all right because you'll be able build a certain number of ships and tanks and planes on a regular schedule. You'll be able to do some work. It's getting from here to there, where you're not buying anything. Because, if you start out with 81 submarines and you're heading for 45, well, the first thing is that you're always above what you need and you're -- and the submarine fleet keeps getting younger because you keep taking out the older ones. So it'll be a long time before you build a submarine -- you need to build a submarine.

We are concerned about whether there are some critical technologies that will be lost when you run into those kind of gaps. And as you rightly point out, the submarine is one example.

Q: Do you have any idea how much this is going to cost? If you will, again, artificially maintain this base --

SEC. ASPIN: Yeah, it's -- what it means is that it's about a \$1.8 billion cost and you get a submarine out of the deal.

Q: But I'm talking about in other programs, too. Won't we have any idea of what the overall cost --

SEC. ASPIN: This -- no. This is the big one. There's nothing else like this.

Q: But what about aircraft carriers (inaudible) maintaining the aircraft carrier industrial base? I assume you've developed CVN-76?

Q: And are you essentially creating an industrial policy with the --

SEC. ASPIN: Not one that would be applied nationwide. I mean, we're talking about a policy which is essentially focused on the defense budgets.

Let me just -- there's one other part to Charlie's question that relates to what you're asking. That is the question -- and it has to do with this industrial policy or the interaction between defense and economics -- and that is that one of the things we'd like to do is to make the US economy create more jobs, be more competitive internationally. And the question is, is there some role that the Defense Department can plan in that? The answer is yes. The Defense Department, in its R&D budget, is amazingly able to invent new technologies. We are also the best country in the world to take that technology and weaponize it as the experts say, turn it into effective weapons, highly-accurate weapons.

So we develop R&D breakthroughs, and then we weaponize it. But what has been happening in the world is that other countries have been taking our R&D and commercializing it. It's a long list -- the fax machine, VCRs -- it's a long list of products that have been developed by the United States and principally by the US military for military uses and have been commercialized by some other country. Part of what we have going here is an attempt to make it easier for American companies to commercialize the spin-offs of our military R&D. That's where you create jobs. That's where you create high-tech jobs. That's where you create high-paying, high-wage jobs, is to get these R&D products that are developed for military uses and figure out how to install them in the commercial market. So that's the third part of this three-part program.

But as I say, it's an industrial policy that relates to defense. We have not thought in terms of doing behind defense.

Q: Mr. Secretary, it seems that your transition from "win, hold, win" to win two nearly simultaneous regional conflicts is more political rhetoric than it is substance, because you actually go -- you have fewer forces to do it. You have one less army National Guard division. You have one extra carrier, but you can't deploy it because you have one fewer carrier air wing. I mean -- and you're -- and timing of when you redeploy to the second contingency is an open-ended thing. So it's basically "win, hold, win" by a different name.

SEC. ASPIN: No. Not true, but let Colin explain. (Laughter.)

Q: You're a short-timer. You can do it. (Laughter.)

GEN. POWELL: I don't think that's an accurate assessment. The carrier you're talking about can be surged. It can pick up maybe a reserve air wing, or it could pick up an active air wing that happens to be in the continental United States at the time working up for another carrier deployment. So there's flexibility with respect to that.

Obviously, as a conservative military officer, I always like to have more, but looking at this strategy carefully with the chiefs and with the Joint Staff and running a lot of war games and examining the changes that have taken place in the world, we are comfortable that we can move from our previous plan down to this new level that came out of the bottom-up review and still be able to, at an acceptable level, give us the ability to deal with these two major regional conflicts near simultaneously.

The real constraint is lift, getting to them, depending on how separated they are in time. I can't help you with how separated they are in time, because that's the uncertainty we deal with. I hope that they remain separated in time forever. The best guarantee of that happening is to make

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sure that you show that second regional potential aggressor that you have the capability to get there near simultaneously to deal with that conflict.

So I don't think it is a political statement at all. I think that the force structure we have arrived at is a solid one. It is clearly linked to the political objectives that the president and the secretary have laid down to us. It is achievable with the dollars that I suspect will be available to the department. And I think it's a good, sound military strategy.

SEC. ASPIN: Let me just finish up on that question that Otto asked. The basic difference between "win, hold, win" and "win-win" is not in the force structure, as you've noticed. The force structure essentially looks like the same for both of them. The key is how fast can you get something in there, and the obvious answer to moving from "win, hold, win" to "win-win" is to get more lift. A problem is that in the short run you can't get more lift. I mean, you know, there's a certain time limit to get the more lift. Plus, we have problems with one of the key elements of this lift, which is the C-17.

So the question then is, is there some other way, other than lift, to get more capability into the theater there earlier which would be the equivalent of more lift? And the answer was that chart that Colin had on the enhancements. And it is things like pre-positioning. It is things like having another carrier which allows you to get carrier air support in there earlier. It is things like having these new weapons and a capability to stop the invading army through airpower. It's a whole series of enhancements that you're looking at that substitute for the lift.

But basically the number of forces that you have to fight both of these wars is not different. I mean, it's a two MRC scenario in either case. The question of whether you can get them there and what you can get there early is the key, and that's what changes a "win, hold, win" strategy into a "win-win" strategy.

Q: Mr. Secretary?

SEC. ASPIN: Yes, sir?

Q: A two-part question, if I may -- one, force structure, and the other -- well, since you're the boss, maybe you can handle both. Supposing you have more than two contingencies with -- given the world the way it is, it's possible. The other question really comes under the category of what I would call the "emperor's new clothes." I mean, as you consider gaming at the war colleges, it would seem to me that you're going to cut forces anyway at the end of the Cold War. Four divisions would seem fairly obvious along with the air wings and others. And if this is a comprehensive, extensive review, and I think gaming could accomplish the missions for two of these in a relatively short time, my bottom-line question to you is what's really new?

SEC. ASPIN: A lot of things are new. The focus of this effort is towards two regional contingencies, which is very different from the base force. I mean, the base force --

Q: Suppose you have more than two.

SEC. ASPIN: Well, I mean, let's get to that question second. But if you look at the layout of what we're trying to do here, we've got some initiatives in this bill that you would not have had before. You've got dealing explicitly with two MRCs, and you've got identified the possible bad guys that you may need to deal with with the MRCs. What you've got is, of course, is force structure which is smaller than what we had before, but we've got a force structure which in some cases has got more, as the chairman pointed out with the Marines. It is a force...a defense budget which has changed its focus from one threat -- Soviet Union/Warsaw Pact -- to a new world of a whole new

of threats. And that shapes the budget, and that is what shapes it. That's what's new. It's fundamental propositions.

We then go through and see how many...what we've got to work with. We're going to need resources, as we will see, in terms of R&D. We're going to need some capabilities that we don't have. This drives you to consideration that there are certain kinds of capabilities that we don't have in our inventory. But what you've got in the first instance is a set of weapons systems and a structure that was designed for a different purpose.

Now we look at what we need for this new purpose we find that some of it we don't need, so we're discarding some of those weapons -- some of those aircraft that we had. We find that some things that we need, we have; we can still use exactly the way they were designed. Great. Some of the things that we had we can use but we have to redesign them for something else. The B-2, instead of being a nuclear bomber, will be a silver bullet kind of conventional bomber. The F-117 was at the outset of the war. We find that there are certain capabilities that we wish we had in this new world that we don't have because we never had the R&D program for it because we were thinking in terms of the Warsaw Pact and the Soviet Union. We're going to have to get an R&D program to develop that.

The other part of the question? Two or more?

SEN. ASPIN: Two or more.

I mean, you -- the whole contingency is for two. How did you arrive at the magic two? What about if it's three, four or half a dozen?

SEN. POWELL: Pick a number, and I'll try to give you a force structure associated with that number. But our best assessment was that these two areas of the world pointed out for major contingencies are the two most likely, and the two that would be absolutely devastating to our interests. We would have to do something about them. So, as a minimum, we have to be able to deal with these two.

Now, if others come along, we may have to use the force -- remember my chart that said the force that actually comes along may have to use the forces we prepared for these two. If they all start to come along long simultaneously, it starts to look like World War III and the Cold War again and -- you may have to build your force back up.

We can't be sure that, at some point in the future, the world starts to look different and it starts to require a buildup. But our best projection right now of what the world is liable to look like is that this is a pretty sound analysis of what we have to be able to do and the structure that we've designed will allow us to do that.

This is a two-part question. Number one, which of your future opponents -- theoretical ones -- justifies the need for even 45 to 50 attack submarines and 18 boomers? That's part one. Number two, in projecting ahead as to future opponents, did you foresee them making any doctrinal changes or developing with the possible exception of the occasional -- the small number of nuclear weapons -- but did you see them developing any new type of threat that would be qualitatively different from the Iraq that this country demolished in 1990, '91?

SEN. ASPIN: Well, let me ask Colin to address the second one. In terms of the submarine force that we looked at was a number of -- there are a number of different ways of using submarines beyond the traditional use of submarines which are going to be looked at and which have been suggested and we're taking a look at. That's why we say we're looking at a number between 45

and 55. For the purposes of this five-year defense budget, we're going to have a 55 force anyway. I mean, you don't come down that fast. We have time to look at this question. It may turn out that 45 is too many, but I think that we're going to continue to look at that and to look at the question of what does it mean for submarines now in this world, what kind of thing it is.

The 18 -- as you say, the nuclear-carrying -- the Trident-carrying submarines -- that's a wholly different thing. That's being driven at this point essentially by START I and START II considerations, and we're looking -- we will be -- when we finish this bottom-up review, the presentation of it and getting it incorporated in the next round of POMs, we will go back and look at the strategic forces. We did not look at the strategic forces very heavily here because they were driven by the START I agreement and the START II agreement and those numbers were kind of fixed in the short run. So we saw no chance to influence those, except later.

Colin, do you want to talk about the --

GEN. POWELL: With respect to -- I might add a point on submarines. We found the other capabilities of submarines particularly useful -- the ability to fire Tomahawks. And so I think there is a continuing role for our submarines. I might point out that there have been a proliferation to some extent of diesel submarines around the world, sort of a weapon of cheap choice. You may notice there are now some submarines prowling the Persian Gulf which do not belong to us or any of our friends. So I think there's a continuing role for the submarine.

And your question with respect to is there anyone else around that rises to the level, say, of what we thought the Iraqi looked like in '90 and '91 we're able to deal with --

Q: (inaudible) projected a more thoughtful or crafty foe?

GEN. POWELL: Well, I don't know. I hope -- at the moment I don't see one. I hope it stays that way, but I will never recommend to any of my civilian leaders that we should, therefore, reduce the quality of our forces or the sophistication of our forces to the lowest common denominator. The reason we were so successful is we, in Desert Storm, made that investment in quality and high technology. We also have to, I think, be very sensitive to some of the developments we see around the world with respect to accuracy of chief weapons. The information revolution is, perhaps, making it possible for some of these Third World countries to develop capabilities quite rapidly that might look rather sophisticated in a few years.

SEC. ASPIN: Last one.

Q: Mr. Secretary?

SEC. ASPIN: There's other people who will be here to ask questions, so we're not the only guys you can talk to. Go ahead.

Q: Back to industrial policy. On military infrastructure and support --

SEC. ASPIN: Before we do that -- Bob, on your question, who else might do it, the other possible -- I mean, the other capable, I would think, out there would be a reversal of reform in Russia as a potential. Where would there be a real challenge. Not just -- you're saying not just a challenge in manpower and in tanks, but a challenge in new technology and new capability. You know, no, it's not likely to come from the Iraqs of the world, but it...and, you know, maybe two or three years from now we'll feel more comfortable about being able to predict for certain the future of Russia.

Go ahead, Tom.

Q: On military infrastructure and support, we have this enormous tail out there, and you seem to have looked at it and come out with the same conclusion as the roles and missions, which is, "Gee, somebody should do something about all that." My question is, what are you going to do about it, or are you just going to leave it to the BRAC?

SEC. ASPIN: In terms of which, the...

Q: The giant military infrastructure, the support services, all the tail.

SEC. ASPIN: Well, yeah, it's a long story, and it's not completely worked out yet. But it is something that we will take it very, very seriously. The whole infrastructure problem is being given

I'll tell you what. When [deleted] comes here in a little while, you ask old [deleted].

(Laughter.) Yeah.

GEN. POWELL: Can I --

SEC. ASPIN: Go ahead. Go ahead. Sure.

GEN. POWELL: I wish we didn't have to just leave it to the BRAC, but the BRAC is the process that the Congress established so we could look at drawing down our bases and our depot structure in a sensible way. So we get a bite at the apple every couple of years. And we have taken a big bite of the apple in '93. I suspect the Secretary will have to take another big bite of the apple in '95.

SEC. ASPIN: Bigger. Bigger.

GEN. POWELL: But the department is trapped to some extent by the political reality of infrastructure drawdown and base closures.

Q: Well, General Cairns, in the Air Force, had an entirely different approach, which was to downsize the depots through contract by contract, and you seem to have rejected that approach.

SEC. ASPIN: Well, I mean, not totally. We'll look at that. This is important, and the only thing to say is that we started with the items that you see before us. The last thing we got to there was the foundations, and the infrastructure's in there. That is absolutely critical. Also critical is establishing some kind of benchmarks, some kind of incentives. I mean, we're talking about a major attempt to figure out how to do that, and we'll be back to you.

Should we give Charlie Cordrey one last...

Q: Thank you, sir.

SEC. ASPIN: In honor for his age and decrepitness? (Laughter.)

Q: The question is for General Powell. When Congressman Aspin said that the base force did not take account of a post-Soviet situation, you described him as mistaken in a television program.

SEC. ASPIN: That's nicer than how he described me, though.

Q: General, briefly, what changed your mind? But specifically, how much additional risk do these top-down cuts impose on the defense establishment?

GEN. POWELL: I don't think they pose any additional risk.

Q: You mean there's no difference between ten divisions and 14?

GEN. POWELL: Of course there is. Of course there is. You know, I could make an argument that we probably -- you know, I could make an argument that maybe you want to stay at 18 until this period of uncertainty is completed. But that really wasn't in the cards. It wasn't an argument I could reasonably make.

In 1990 and '91 and into '92, when we were developing and presenting the base force, we presented it as a force that looked to us as a prudent force to go down to in light of what we saw at that time. It was controversial. There were those who thought we were going too fast, those who thought we were going too slow. And you remember all of those battles, Charles.

Your colleague and friend, Secretary Aspin, now my boss, he wins the debates now. He didn't always win the debates. (Laughter.) But we had great fun and a lot of excitement debating that issue. The Secretary pointed out at that time that he didn't believe we took fully into account the total collapse of the Soviet Union in December of 1991. The point we made back at the time is that we had anticipated a fundamental change in the nature of the Soviet Union, and I think that's a true statement, but we didn't predict its absolute collapse the way it happened.

The Secretary and I have also discussed that even since those days of intense debate, we've seen something of a third revolution. I mean, nobody quite thought we would see Eastern Europe looking the way Eastern Europe is looking today. Nobody back then thought of a Somalia, and this was really with the background of Desert Storm. So with a little more time passing, with another review of the strategy, I think the base force served its purpose as a transitional concept coming out of the Cold War period, and as Secretary Aspin testified, if I may, Mr. Secretary -- when we were testifying on the budget earlier, he said what we're now doing in the bottom-up review is kind of the -- like the successor to the base force, and builds on some of the work we did during the base force because the strategy underpinning is quite similar, and it ought to be quite similar because the world looks the same to us, whether you were wearing base force eyes or bottom-up review eyes. You have those two major regional contingencies that it is prudent for us to be able to deal with.

So I'm very comfortable with where we are, as are all my colleagues on the Joint Chiefs of Staff, as are the commanders of the unified commands who will have to go out and fight these conflicts.

SEC. ASPIN: And the other thing, Charlie, is the -- I mean, the lift study that you guys [JCS] did. They began a lift study and a few other studies under the base force which is absolutely critical. I mean, we just -- it's been tremendously helpful in putting together the bottom-up review. That actually laid out exactly what we need to have here.

So a lot of that work was done that we've been building on -- a lot of the work under the base force we've been building on here.

Thank you all very much. Thank you.

(end)



THE DEPUTY SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

3 SEP 1993

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
COMPTROLLER, DOD
DIRECTOR OPERATIONAL TEST AND EVALUATION
DIRECTORS OF THE DEFENSE AGENCIES

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SUBJECT: Fiscal Year 1995-99 Program/Budget Development

The Bottom-Up Review has provided us with a sound military strategy and planning baseline for the Clinton Administration's initial Future Years Defense Program (FYDP). This memorandum outlines the procedures that we will follow during the program review that will continue this process. Our fundamental objective remains the same: to provide "forces ready to fight" in the new strategic context.

We will proceed according to the attached schedule. For the tightly compressed program review phase, we will operate largely as we did during the Bottom-Up Review. To this end, I am establishing two new entities: the Program Review Group and the Defense Resources Board.

The Program Review Group will perform in the same role as the Bottom-Up Review Steering Group in identifying major issues, analyzing them, and developing decision options. I am asking the Under Secretary of Defense (Acquisition) to serve again as chairman of this group, and the Vice Chairman of the Joint Chiefs of Staff to serve as vice-chair; the Director for Program Analysis and Evaluation will serve as the executive secretary. Other members will include the DoD Comptroller, Assistant Secretary of Defense (Personnel and Readiness), Assistant Secretary of Defense (Strategy, Requirements and Resources), senior service representatives, and others as designated by the Under Secretary of Defense (Acquisition) for specific issues.

The Bottom-up Review established the baseline for the FY 1995-99 defense program. These decisions should not be revisited. The primary focus of the Program Review Group will be on programmatic issues that were not addressed or fully treated during the Bottom-Up Review. Attached to this memorandum is an initial list of these issues. Other issues may arise from review of component POM submissions. The Director for Program Analysis and Evaluation will organize issue teams--with membership drawn from cognizant OSD staffs, the Joint Staff and service representatives--to develop issues for presentation to the Program Review Group. The Program Review Group will screen and develop these issues for presentation to the Defense Resources Board (DRB).

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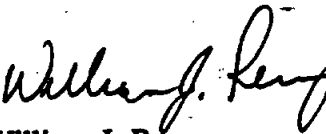
The DRB will assist the Secretary in making major program decisions. In addition to the Secretary and myself (acting as DRB Chairman in the Secretary's absence), the DRB will include the Chairman of the Joint Chiefs of Staff, Vice Chairman of the Joint Chiefs of Staff, Under Secretary of Defense (Acquisition), Under Secretary of Defense (Policy), Assistant Secretary of Defense (Personnel and Readiness), DoD Comptroller, and the Secretaries of the Military Departments. The Director for Program Analysis and Evaluation shall act as Executive Secretary. I will designate other members for individual meetings as appropriate.

In addition to issues developed by the Program Review Group and decided by the Secretary with the DRB, there will be a number of other issues that will require resolution in the program process. The Director for Program Analysis and Evaluation will present these issues directly to me and the Under Secretary of Defense (Acquisition) for decision, following coordination with other interested parties.

Detailed instructions, appropriately modified from those of previous program reviews, will be issued shortly by the Director for Program Analysis and Evaluation. The instructions will include a schedule of program review activities, leadership assignments for the teams that will prepare issue papers, and general guidance on the preparation of issue papers.

All programmatic decisions will be incorporated into the Comptroller's program/budget data base update in early November. The budget review will be conducted largely in accordance with procedures used in the recent past, although also on a much compressed schedule.

I urge all of you to continue the excellent cooperation evident in the Bottom-Up Review as we move through these final critical steps in the Administration's first Planning Programming and Budgeting cycle.


William J. Perry

Attachments

FY95-99 PROGRAM REVIEW

<u>DATE</u>	<u>EVENT</u>
Sept. 1	Bottom-Up Review released
Sept. 3	Final Fiscal Guidance issued to Components
Sept. 29	Components submit POMs
Oct. 6	Additional issue paper topics identified
Oct. 4 - Oct. 29	Program Review Group reviews and presents major program options for Defense Resources Board
Oct. 29 - Nov. 1	Secretary of Defense makes final program decisions
Nov. 3	Program Decision Memoranda issued

9/1/93

PROGRAM REVIEW ISSUES

GENERAL

Strategic Force Issues
Readiness and Sustainability
Precision Munitions
Unmanned Reconnaissance Capabilities
Strategic Mobility
Major Weapon Systems Funding
Post-FYDP Defense Program
NFIP/TIARA

ARMY

Army Reserve Component Equipment Level and Force Structure
Armored Vehicle Modernization
Utility Helicopters

NAVY

Surface Combatant Modernization
Navy/Marine TacAir Integration
V-22/Medium Lift Replacement (DAB)

AIR FORCE

Heavy Bomber Force Conventional Enhancements
Space-Based Early Warning System Capabilities
Strategic Airlift Force Structure Options (C-17 DAB)

INFRASTRUCTURE

Civilian Work Force Reduction Strategy
Defense Agency Manpower
Depot Maintenance
Defense Health Program
Defense Strategic Logistics Plan
Science and Technology Program
DoD FY 1995 BRAC Process



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IMMEDIATE RELEASE

September 1, 1993

SECRETARY ASPIN ANNOUNCES BOTTOM UP REVIEW RESULTS

It was December 1991 at Georgetown University that candidate Bill Clinton pledged to "restructure our military forces for a new era." Today, Secretary of Defense Les Aspin announced fulfillment of that pledge. "We'll have a force based on tomorrow's requirements, a lean, mobile, high-tech force ready to protect Americans against the real dangers they face in this new era," Secretary Aspin said.

The review was a highly collaborative effort composed of a steering group chaired by the Under Secretary of Defense for Acquisition and included representatives from the offices within the Office of the Secretary of Defense, the Joint Staff, and the Services.

Its unprecedented scope encompasses all major elements of defense planning, from the formulation of strategy, to construction of force structure, to weapon system modernization, and finally the reconfiguring of the Department of Defense (DoD) infrastructure.

"It couldn't be any other way. The process has brought the civilian and military communities closer together. We've established a working relationship over the last five months that would have taken a year or two to develop with this review," said Secretary Aspin.

The Bottom-Up Review's analytic process reviewed both the new dangers and opportunities foreseen in the post-Cold War world. The review developed new military strategies and plans to carry out these strategies in force structure, weapons modernization, and new defense initiatives.

The review identifies force structure required to maintain the capabilities to win two nearly simultaneous major regional conflicts. In this force structure the Army will have 10 active divisions and 15 reserve brigades, the Navy will maintain 11 carrier battlegroups and one reserve carrier, the Marine Corps will have five active brigades and one reserve division, and the Air Force will retain 13 active duty and seven reserve fighter wings.

(MORE)

To help these smaller forces remain combat ready, the review calls for force enhancements such as:

- Additional prepositioned equipment;
- Additional airlift/sealift;
- Improved anti-armor and precision-guided munitions;
- Improved Army National Guard combat brigade readiness.

The United States will continue its overseas presence to deter regional aggression, while retaining its commitments to peacekeeping and other military operations under the Bottom-Up Review.

As President Clinton said in February 1993, "The men and women who serve under the American Flag will be the best trained, best equipped, best prepared fighting force in the world, so long as I am President."

-END-

Force Structure Excerpts

Bottom-Up Review

Les Aspin
Secretary of Defense

September 1, 1993

NATIONAL SECURITY IN THE POST-COLD WAR WORLD

Introduction

The Cold War is behind us. The Soviet Union is no longer. The threat that drove our defense decision-making for four and a half decades — that determined our strategy and tactics, our doctrine, the size and shape of our forces, the design of our weapons, and the size of our defense budgets — is gone.

Now that the Cold War is over, the questions we face in the Department of Defense are: How do we structure the armed forces of the United States for the future? How much defense is enough in the post-Cold War era?

Several important events over the past four years underscore the revolutionary nature of recent changes in the international security environment and shed light on this new era and on America's future defense and security requirements.

- In 1989, the fall of the Berlin Wall and the collapse of communism throughout Eastern Europe precipitated a strategic shift away from containment of the Soviet empire.
- In 1990, Iraq's brutal invasion of Kuwait signaled a new class of regional dangers facing America — dangers spurred not by a global, empire-building ideological power, but by rogue leaders set on regional domination through military aggression while simultaneously pursuing nuclear, biological, and chemical weapons capabilities. The world's response to Saddam's invasion also demonstrated the potential in the new era for broad-based, collective military action to thwart such tyrants.
- In 1991, the failed Soviet coup demonstrated the Russian people's desire for democratic change and hastened the collapse of the Soviet Union as a national entity and military foe.

In the aftermath of such epochal events, it has become clear that the framework that guided our security policy during the Cold War is inadequate for the future. We must determine the characteristics of this new era, develop a new strategy, and restructure our armed forces and defense programs accordingly. We cannot, as we did for the past several decades, premise this year's forces, programs, and budgets on incremental shifts from last year's efforts. We must rebuild our defense strategy, forces, and defense programs and budgets from the bottom up.

The purpose of the Bottom-Up Review is to define the strategy, force structure, modernization programs, industrial base, and infrastructure needed to meet new dangers and seize new opportunities.

An Era of New Dangers

Most striking in the transition from the Cold War is the shift in the nature of the dangers to our interests, as illustrated in Figure 1.

The new dangers fall into four broad categories:

- **Dangers posed by nuclear weapons and other weapons of mass destruction**, including dangers associated with the proliferation of nuclear, biological, and chemical weapons as well as those associated with the large stocks of these weapons that remain in the former Soviet Union.
- **Regional dangers**, posed primarily by the threat of large-scale aggression by major regional powers with interests antithetical to our own, but also by the potential for smaller, often internal, conflicts based on ethnic or religious animosities, state-sponsored terrorism, and subversion of friendly governments.

New Dangers

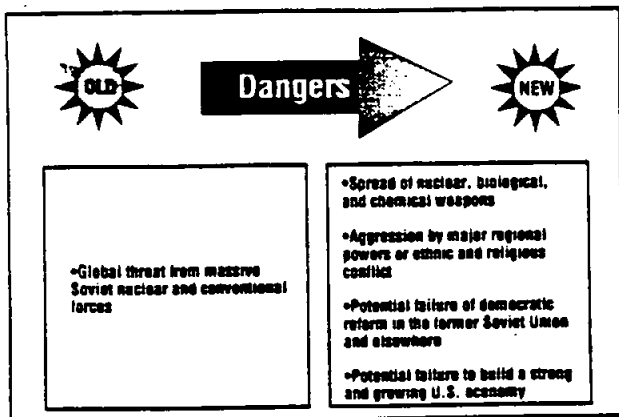


Figure 1

- Dangers to democracy and reform, in the former Soviet Union, Eastern Europe, and elsewhere.

- Economic dangers to our national security, which could result if we fail to build a strong, competitive and growing economy.

Our armed forces are central to combating the first two dangers and can play a significant role in meeting the second two. Our predictions and conclusions about the nature and characteristics of these dangers will help mold our strategy and size and shape our future military forces.

An Era of New Opportunities

During the Cold War, few entertained realistic aspirations for a markedly safer, freer world. Our strategy of containment was, perforce, defensive in nature, designed primarily to hold the Soviet Union and China in check. Today, there is promise that we can replace the East-West confrontation of the Cold War with an era in which the community of nations, guided by a common commitment to democratic principles, free-market economics, and the rule of law, can be significantly enlarged.

As Figure 2 shows, beyond new dangers, there are new opportunities: realistic aspirations that, if we dedicate ourselves to pursue worthy goals, we can reach a world of greater safety, freedom, and prosperity. Our armed forces can contribute to this objective. In brief, we see new opportunities to:

- Expand and adapt our existing security partnerships and alliances and build a larger community of democratic nations.

- Promote new regional security arrangements and alliances to improve deterrence and reduce the potential for aggression by hostile regional powers.

- Implement the dramatic reductions in the strategic nuclear arsenals of the United States and the former Soviet Union achieved in the START I and II treaties.

- Protect and advance our security with fewer resources, freeing excess resources to be invested in other areas vital to our prosperity.

New Opportunities

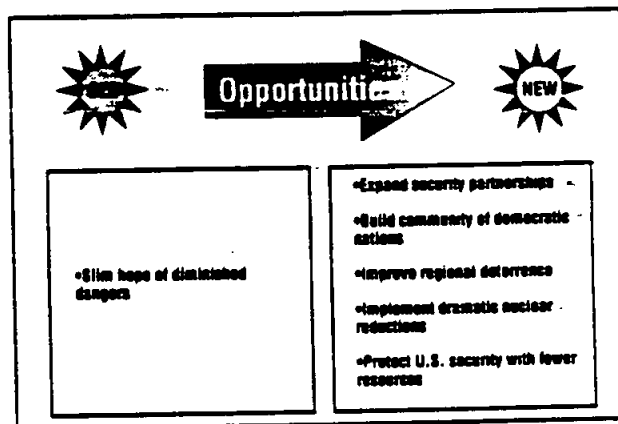


Figure 2

FORCES TO IMPLEMENT OUR DEFENSE STRATEGY

Major Regional Conflicts

During the Cold War, our military planning was dominated by the need to confront numerically superior Soviet forces in Europe, the Far East, and Southwest Asia. Now, our focus is on the need to project power into regions important to our interests and to defeat potentially hostile regional powers, such as North Korea and Iraq. Although these powers are unlikely to threaten the United States directly, these countries and others like them have shown that they are willing and able to field forces sufficient to threaten important U.S. interests, friends, and allies. Operation Desert Storm was a powerful demonstration of the need to counter such regional aggression.

Potential regional aggressors are expected to be capable of fielding military forces in the following ranges:

- 400,000 – 750,000 total personnel under arms
- 2,000 – 4,000 tanks
- 3,000 – 5,000 armored fighting vehicles
- 2,000 – 3,000 artillery pieces
- 500 – 1,000 combat aircraft
- 100 – 200 naval vessels, primarily patrol craft armed with surface-to-surface missiles, and up to 50 submarines
- 100 – 1000 Scud-class ballistic missiles, some possibly with nuclear, chemical, or biological warheads.

Military forces of this size can threaten regions important to the United States because allied or friendly states are often unable to match the power of such a potentially aggressive neighbor. Hence, we must prepare our forces to assist those of our friends and allies in deterring, and ultimately, defeating aggression, should it occur.

Scenarios as Planning Tools. Every war that the United States has fought has been different from the last, and different from what defense planners had envisioned. For example, the majority of the bases and facilities used by the United States and its coalition partners in Operation Desert Storm were built in the 1980s, when we envisioned a Soviet invasion through Iran to be the principal threat to the Gulf region. In planning forces capable of fighting and winning major regional conflicts (MRCs), we must avoid preparing for past wars. History suggests that we most often deter the conflicts that we plan for and actually fight the ones we do not anticipate.

For planning and assessment purposes, we have selected two illustrative scenarios that are both plausible and that posit demands characteristic of those that could be posed by conflicts with a wide range of regional powers. While a number of scenarios were examined, the two that we focused on most closely in the Bottom-Up Review envisioned aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea.

Neither of these scenarios should be regarded as a prediction of future conflicts, but each provides a useful representation of the challenge presented by a well-armed regional power initiating aggression thousands of miles from the United States. As such, the scenarios serve as yardsticks against which to assess, in gross terms, the capabilities of U.S. forces. Figure 4 illustrates the scenarios and their relationship to planning for force employment across a range of potential conflicts.

In each scenario, we examined the performance of projected U.S. forces in relation to many critical parameters, including warning time, the threat, terrain, weather, duration of hostilities, and combat intensity. Overall, these scenarios were representative of likely ranges of these critical parameters.

Objectives and Methodology of the Bottom-Up Review

We undertook the Bottom-Up Review to select the right strategy, force structure, modernization programs, and supporting industrial base and infrastructure to provide for America's defense in the post-Cold War era.

Figure 3 shows the step-by-step process we used to develop key assumptions, broad principles, and general objectives and translate them into a specific plan for our strategy, forces, and defense resources.

These steps included:

1. Assessing the post-Cold War era, and particularly the new dangers, opportunities, and uncertainties it presents.
2. Devising a U.S. defense strategy to protect and advance our interests in this new period.

Methodology of the Bottom-Up Review

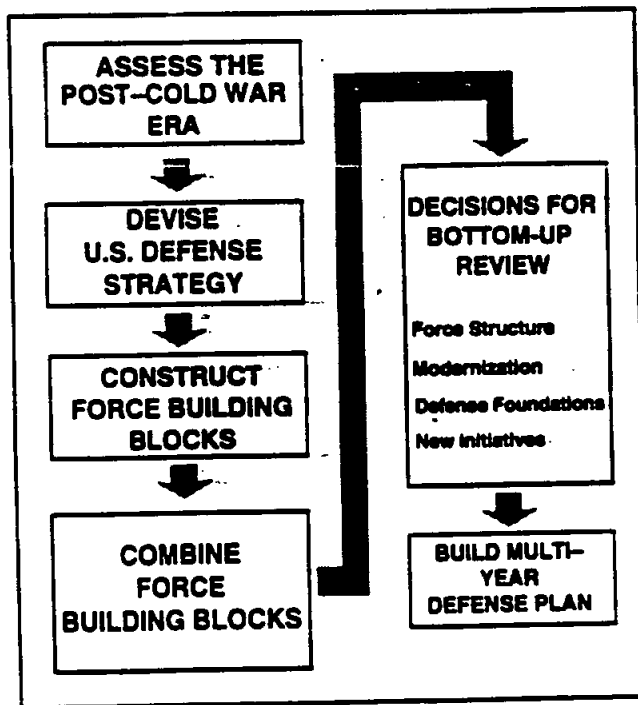


Figure 3

3. Constructing building blocks of forces to implement this strategy.

4. Combining these force building blocks to produce options for our overall force structure.

5. Complementing the force structure with weapons acquisition programs to modernize our forces, defense foundations to sustain them, and policy initiatives to address new dangers and take advantage of new opportunities.

With the Bottom-Up Review now complete, we will utilize its results to build a multi-year plan for America's future security, detailing the forces, programs, and defense budgets the United States needs to protect and advance its interests in the post-Cold War period.

The Bottom-Up Review represented a close collaboration between the civilian and military sectors of the Department of Defense. Task forces were established—including representatives from the Office of the Secretary of Defense, the Joint Staff, the unified and specified commands, each of the armed services and, where appropriate, other defense agencies—to review the major issues entailed in planning defense strategy, forces, modernization programs, and other defense foundations. Numerous studies helped to formulate the key issues for decisionmakers and provided the analytical underpinning for our review.

We offer this plan for public consideration as a means of forming a new national consensus on America's strategic role in global affairs, the military instruments needed to fulfill that role, and the level of resources necessary to provide those instruments.

Building Future Capabilities: Guiding Principles

Certain other underlying principles guided our effort during the Bottom-Up Review. In his inaugural address, President Clinton pledged to keep America's military the best trained, best equipped, best prepared

fighting force in the world. To fulfill that pledge, we must keep it the focus of our effort throughout the planning, programming, and budgeting process.

First, we must **keep our forces ready to fight**. We have already witnessed the challenges posed by the new dangers in operations like Just Cause (Panama), Desert Storm (Iraq), and Restore Hope (Somalia). Each of these was a "come as you are" campaign with little time to prepare our forces for the challenges they met.

The new dangers thus demand that we keep our forces ready to fight as a top priority in allocating scarce defense resources. We must adequately fund operations and maintenance accounts, maintain sufficient stocks of spare parts, keep our forces well-trained and equipped, and take the other steps essential to preserving readiness.

A key element of maintaining forces ready to fight is to **maintain the quality of our people**, so that they remain the best fighting force in the world. This means keeping our personnel highly motivated by treating them fairly and maintaining their quality of life. It also means continuing to recruit talented young men and women, expanding career opportunities for all service personnel, and putting in place programs to ease the transition to civilian life for many of our troops as we bring down the size of our forces.

We must also **maintain the technological superiority** of our weapons and equipment. Operation Desert Storm demonstrated that we produce the best weapons and military equipment in the world. This technological edge helps us to achieve victory more swiftly and with fewer casualties. We must design a balanced modernization program that will safeguard this edge and the necessary supporting industrial base without buying more weapons than we need or can afford.

Both scenarios assumed a similar enemy operation: an armor-heavy, combined-arms offensive against the outnumbered forces of a neighboring state. U.S. forces, most of which were not present in the region when hostilities commenced, had to deploy to the region quickly, supplement indigenous forces, halt the invasion, and defeat the aggressor.

Such a short-notice scenario, in which only a modest number of U.S. forces are in a region at the commencement of hostilities, is both highly stressing and plausible. History shows that we frequently fail to anticipate the location and timing of aggression, even large-scale attacks against our interests. In such cases,

it may also not be possible, prior to an attack, to reach a political consensus on the proper U.S. response or to convince our allies to grant U.S. forces access to facilities in their countries.

We also expect that the United States will often be fighting as the leader of a coalition, with allies providing some support and combat forces. As was the case in Desert Storm, the need to defend common interests should prompt our allies in many cases to contribute capable forces to the war effort. However, our forces must be sized and structured to preserve the flexibility and the capability to act unilaterally, should we choose to do so.

Scenarios as Planning Tools

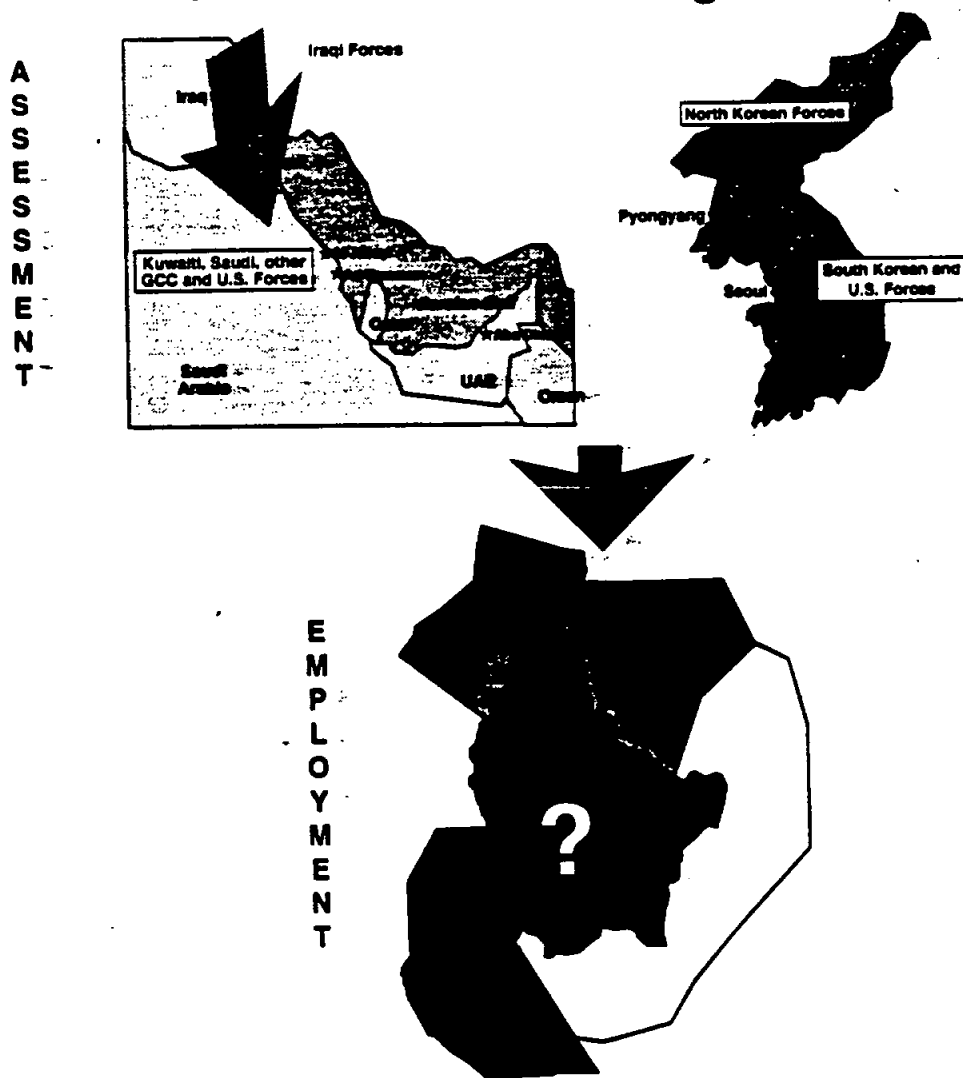


Figure 4

The Four Phases of U.S. Combat Operations

Our first priority in preparing for regional conflicts is to prevent them from ever occurring. This is the purpose of our overseas presence forces and operations, joint exercises, and other military capabilities — to deter potential regional aggressors from even contemplating an attack. Should deterrence fail and conflict occur, it is envisioned that combat operations would unfold in four main phases:

Phase 1: Halt the invasion. The highest priority in defending against a large-scale attack will most often be to minimize the territory and critical facilities that the invader can capture. Should important strategic assets fall to the invader, it might attempt to use them as bargaining chips. In addition, stopping the invasion quickly may be key to ensuring that the threatened ally can continue its crucial role in the collective effort to defeat the aggressor. Further, the more territory the enemy captures, the greater the price to take it back: The number of forces required for the counteroffensive to repel an invasion can increase, with correspondingly greater casualties, depending on the progress the enemy makes. In the event of a short-warning attack, more U.S. forces would need to deploy rapidly to the theater and enter the battle as quickly as possible.

Phase 2: Build up U.S. combat power in the theater while reducing the enemy's. Once the enemy attack had been stopped and the front stabilized, U.S. and allied efforts would focus on continuing to build up combat forces and logistics support in the theater while reducing the enemy's capacity to fight. Land, air, maritime, and special operations forces from the United States and coalition countries would continue to arrive. These forces would seek to ensure that the enemy did not regain the initiative on the ground, and they would mount sustained attacks to reduce the enemy's military capabilities in preparation for the combined-arms counteroffensive.

Phase 3: Decisively defeat the enemy. In the third phase, U.S. and allied forces would seek to mount

a large-scale, air-land counteroffensive to defeat the enemy decisively by attacking his centers of gravity, retaking territory he had occupied, destroying his war-making capabilities, and successfully achieving other operational or strategic objectives.

Phase 4: Provide for post-war stability. Although a majority of U.S. and coalition forces would begin returning to their home bases, some forces might be called upon to remain in the theater after the enemy had been defeated to ensure that the conditions that resulted in conflict did not recur. These forces could help repatriate prisoners, occupy and administer some or all of the enemy's territory, or to ensure compliance with the provisions of war-termination or cease-fire agreements.

Forces for Combat Operations

Described below are the types of forces that are needed to conduct joint combat operations in all four phases of an MRC.

Forces for Phase 1. Primary responsibility for the initial defense of their territory rests, of course, with our allies. As forces of the besieged country move to blunt an attack, U.S. forces already in the theater would move rapidly to provide assistance. However, as already mentioned, we are drawing down our overseas presence in response to the end of the Cold War. Thus, the bulk of our forces, even during the early stages of conflict, would have to come from the United States. This places a premium on rapidly deployable yet highly lethal forces to blunt an attack.

The major tasks to be performed in this phase and beyond are:

- Help allied forces establish a viable defense that halts enemy ground forces before they can achieve critical objectives.
- Delay, disrupt, and destroy enemy ground forces and damage the roads along which they are moving, in order to halt the attack. U.S. attacks would be mounted by a combination of land- and seabased

strike aircraft, heavy bombers, long-range tactical missiles, ground maneuver forces with antiarmor capabilities, and special operations forces.

- Protect friendly forces and rear-area assets from attack by aircraft or cruise and ballistic missiles, using land and sea-based aircraft, ground- and sea-based surface-to-air missiles, and special operations forces.
- Establish air superiority and suppress enemy air defenses as needed, including those in rear areas and those accompanying invading ground forces, using land- and sea-based strike and jamming aircraft as well as surface-to-surface missiles, such as the Army Tactical Missile System (ATACMS).
- Destroy high-value targets, such as weapons of mass destruction, and degrade the enemy's ability to prosecute military operations through attacks focused on his central command, control, and communications facilities. For such attacks, we would rely heavily on long-range bombers, land and sea-based strike aircraft, cruise missiles, and special operations forces.
- Establish maritime superiority, using naval task forces with mine countermeasure ships, in order to ensure access to ports and sea lines of communication, and as a precondition for amphibious assaults.



An ATACMS launch.

Forces for Phase 2. Many of the same forces employed in Phase 1 would be used in the second phase to perform similar tasks — grinding down the enemy's military potential while additional U.S. and other coalition combat power is brought into the region. As more land- and sea-based air forces arrived, emphasis would shift from halting the invasion to isolating enemy ground forces and destroying them, destroying enemy air and naval forces, destroying stocks of supplies, and broadening attacks on military-related targets in the enemy's rear area. These attacks could be supplemented with direct and indirect missile and artillery fire from ground, air, and sea forces.

Meanwhile, other U.S. forces, including heavy ground forces, would begin arriving in the theater to help maintain the defensive line established at the end of Phase I and to begin preparations for the counteroffensive.

Forces for Phase 3. The centerpiece of Phase 3 would be the U.S. and allied counteroffensive, aimed at engaging, enveloping, and destroying or capturing enemy ground forces occupying friendly territory. Major tasks within the counteroffensive include:

- Breaching tactical and protective minefields.
- Maneuvering to envelop or flank and destroy enemy forces, including armored vehicles in dug-in positions.
- Conducting or threatening an amphibious invasion.
- Dislodging and defeating infantry fighting from dug-in positions; defeating light infantry in urban terrain.
- Destroying enemy artillery.
- Locating and destroying mobile enemy reserves.

Combat power in this phase would include highly mobile armored, mechanized, and air assault forces, supported by the full complement of air power, special

operations forces, and land- and sea-based fire support. Amphibious forces would provide additional operational flexibility to the theater commander.

Forces for Phase 4. Finally, a smaller complement of joint forces would remain in the theater once the enemy had been defeated. These forces might include a carrier battle group, one to two wings of fighters, a division or less of ground forces, and special operations units.

Supporting Capabilities

The foregoing list of forces for the various phases of combat operations included only combat force elements. Several types of support capabilities would play essential roles throughout all phases.

Airlift. Adequate airlift capacity is needed to bring in forces and materiel required for the first weeks of an operation. In Operations Desert Shield/Desert Storm, the United States delivered to the Gulf region, on average, more than 2,400 tons of material per day by airlift. We anticipate that at least the same level of lift capacity will be needed to support high-intensity military operations in the opening phase of a future MRC and to help sustain operations thereafter.

Prepositioning. Prepositioning heavy combat equipment and supplies, both ashore and afloat, can greatly reduce both the time required to deploy forces to distant regions and the number of airlift sorties devoted to moving such supplies. Initiatives now underway will accelerate the arrival of the Army's heavy forces in distant theaters.

Sealift. In any major regional conflict, most combat equipment and supplies would be transported by sea. While airlift and prepositioning provide the most rapid response for deterrence and initial defense, the deployment of significant heavy ground and air forces, their support equipment, and sustainment must come by sea.

Battlefield Surveillance; Command, Control and Communications. Accurate information on the

location and disposition of enemy forces is a prerequisite for effective military operations. Hence, our planning envisions the early deployment of reconnaissance and command and control aircraft and ground-based assets to enable our forces to see the enemy and to pass information quickly through all echelons of our forces. Total U.S. intelligence and surveillance capability will be less than it was during the Cold War, but it will be better able to provide timely information to battlefield commanders. Advanced systems, such as the Joint Surveillance and Target Attack Radar System (JSTARS), the upgraded Airborne Warning and Control System (AWACS), and the MILSTAR satellite communications system, will ensure that U.S. forces have a decisive advantage in tactical intelligence and communications.



Maritime prepositioning ships.

Advanced Munitions. As U.S. operations in the Gulf War demonstrated, advanced precision-guided munitions can dramatically increase the effectiveness of U.S. forces. Precision-guided munitions already in the U.S. inventory (for example, laser-guided bombs) as well as new types of munitions still under development are needed to ensure that U.S. forces can operate successfully in future MRCs and other types of conflicts. New "smart" and "brilliant" munitions under development hold promise of dramatically improving the capabilities of U.S. air, ground, and maritime forces to destroy enemy armored vehicles and halt invading ground forces, as well as destroy fixed targets at longer ranges, reducing exposure to enemy air defenses.

Aerial Refueling. Large numbers of aerial-refueling aircraft would be needed to support many components of a U.S. theater campaign. Fighter aircraft deploying over long distances require aerial refueling. Airlifters can also carry more cargo longer distances if enroute aerial refueling is available. Aerial surveillance and control platforms, such as AWACS and JSTARS, also need airborne refueling in order to achieve maximum mission effectiveness.

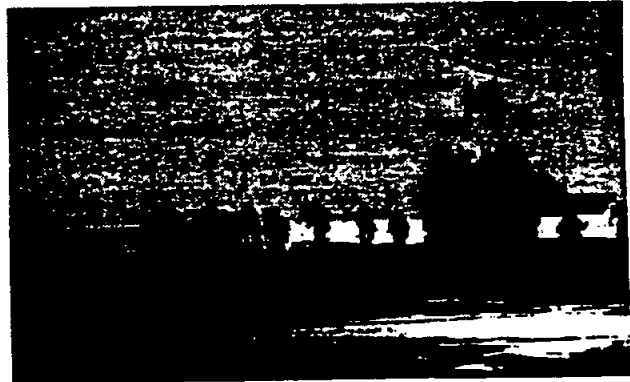
The MRC Building Block

In planning future force structure and allocating resources, we established forces levels and support which should enable us to win one MRC across a wide range of likely conflicts. Our detailed analyses of future MRCs, coupled with military judgment of the outcomes, suggest that the following forces will be adequate to execute the strategy outlined above for a single MRC:

- 4 - 5 Army divisions
- 4 - 5 Marine Expeditionary Brigades
- 10 Air Force fighter wings
- 100 Air Force heavy bombers
- 4 - 5 Navy aircraft carrier battle groups
- Special operations forces

These forces constitute a prudent building block for force planning purposes. In the event of an actual regional conflict, our response would depend on the nature and scale of the aggression and circumstances elsewhere in the world. If the initial defense fails to halt the invasion quickly, or if circumstances in other parts of the world permit, U.S. decisionmakers may decide to commit more forces than those listed (for example, two additional Army divisions.) These added forces would help either to achieve the needed advantage over the enemy, to mount the decisive counteroffensive, or accomplish more ambitious war objectives, such as the complete destruction of the enemy's war-making potential. But our analysis also led us to the conclusion that enhancements to our military forces, focused on ensuring our ability to conduct a successful initial-defense, would both reduce our overall ground

force requirements and increase the responsiveness and effectiveness of our power projection forces.



U.S. Marines conducting amphibious assault exercise.

Fighting Two MRCs

In this context, we decided early in the Bottom-Up review that the United States must field forces sufficient to fight and win two nearly simultaneous major regional conflicts. This is prudent for two reasons:

- First, we need to avoid a situation in which the United States in effect makes simultaneous wars more likely by leaving an opening for potential aggressors, to attack their neighbors, should our engagement in a war in one region leave little or no force available to respond effectively to defend our interests in another.

- Second, fielding forces sufficient to win two wars nearly simultaneously provides a hedge against the possibility that a future adversary — or coalition of adversaries — might one day confront us with a larger-than-expected threat. In short, it is difficult to predict precisely what threats we will confront ten to twenty years from now. In this dynamic and unpredictable post-Cold War world we must maintain military capabilities that are flexible and sufficient to cope with unforeseen threats.

For the bulk of our ground, naval, and air forces, fielding forces sufficient to provide this capability involves duplicating the MRC building block described above. However, in planning our overall force struc-

ture, we must recognize two other factors. First, we must have sufficient strategic lift to deploy forces when and where we need them. Second, certain specialized high-leverage units or unique assets might be "dual tasked," that is, used in both MRCs.

For example, certain advanced aircraft — such as B-2s, F-117s, JSTARS, AWACS, and EF-111s — that we have purchased in limited numbers because of their expense would probably be dual-tasked.

Force Enhancements to Support Our Strategy

As previously mentioned, we have already undertaken or are planning a series of enhancements to our

forces to improve their capability, flexibility, and lethality. These enhancements are especially geared toward buttressing our ability to conduct a successful initial defense in any major regional conflict.

As shown in Figure 5, these enhancements include improving: (1) strategic mobility through more prepositioning and enhancements to airlift and sealift; (2) the strike capabilities of aircraft carriers; (3) the lethality of Army firepower; and (4) the ability of long-range bombers to deliver conventional smart munitions.

Strategic Mobility. Our plans call for substantial enhancements to our strategic mobility — most of

Force Enhancements to Halt a Short-Warning Attack

		Today's Force	Future Force
Persian Gulf Region	Prepo	1 Battalion Training Set 1 Maritime Prepositioning Ship (MPS) Squadron 7 Prepositioning Ships	2 Brigade Sets ashore 1 Brigade Set afloat* 1 MPS Squadron 7 Prepositioning Ships
	Forces	1 Carrier Battle Group (Tether)	1 Carrier Battle Group (Tether)
PHASE I Halt Invasion		FAIR - Lack of heavy forces to help stop invader - Insufficient prepositioning - Limited armor capability - Limited Anti-Tactical Ballistic Missile (ATBM) capability	GOOD - 3 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Air, land, and sea armor enhancements - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces
KOREA	Prepo	1 Brigade-Sized Marine Expeditionary Force (MEF) 1 MPS Squadron	1 Brigade Set ashore 1 Brigade Set afloat* 2 Brigade-sized MEF (2 MPS Squadrons)
	Forces	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF
PHASE I Halt Invasion		GOOD - Substantial in-place forces - Established Command, Control and Communications/Intelligence (C3I) network - Rapid reinforcement from Japan, Okinawa - Limited ATBM capability	GOOD - 2 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Air, land, and sea armor enhancements - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces

* Brigade Set would be positioned to "swing" to either region.

Figure 5

which were first identified in the 1991 Mobility Requirements Study (MRS). First, we will either continue the program to purchase and deploy the C-17 airlifter or purchase other airlifters to replace our aging C-141 transport aircraft. Development of the C-17 has been troubled from the start and we will continue to monitor the program's progress closely, but significant, modern, flexible airlift capacity is essential to our defense strategy. A decision on the C-17 will be made after a thorough review by the Defense Acquisition Board is completed over the next several weeks. Second, we plan to keep an Army brigade set of heavy armor afloat on ships deployed abroad that could be sent either to the Persian Gulf or to Northeast Asia on short notice. Other prepositioning initiatives would accelerate the arrival of Army heavy units in Southwest Asia and Korea. Third, we will increase the capacity of our surge sealift fleet to transport forces and equipment rapidly from the United States to distant regions by purchasing additional roll-on/roll-off ships. Fourth, we will improve the readiness and responsiveness of the Ready Reserve Force (RRF) through a variety of enhancements. Finally, we will fund various efforts to improve the "fort-to-port" flow of personnel, equipment, and supplies in the United States.

Naval Strike Aircraft. The Navy is examining a number of innovative ways to improve the firepower aboard its aircraft carriers. First, the Navy will improve its strike potential by providing a precision ground-attack capability to many of its F-14 aircraft. It will also acquire stocks of new "brilliant" antiarmor weapons for delivery by attack aircraft. Finally, the Navy plans to develop the capability to fly additional squadrons of F/A-18s to forward-deployed aircraft carriers that would be the first to arrive in response to a regional contingency. These additional aircraft would increase the power of the carriers during the critical early stages of a conflict.

Army Firepower. The Army is developing new, smart submunitions that can be delivered by ATACMS, the Multiple-Launch Rocket System (MLRS), the Tri-Service Standoff Attack Missile (TSSAM) now under development, and by standard tube artillery. In addition, the Longbow fire control radar system will in-

crease the effectiveness and survivability of the AH-64 Apache attack helicopter. We are also examining more prepositioning of ATACMS and MLRS and having Apaches self-deploy from their overseas bases so that all would be available in the early stages of a conflict.

Air Force Long-Range Bombers and Munitions. The Air Force enhancements will be in two areas, bombers and munitions. First, we plan to modify the Air Force's B-1 and B-2 long-range, heavy bombers to improve their ability to deliver "smart" conventional munitions against attacking enemy forces and fixed targets. Second, we will develop all-weather munitions. For example, the Air Force is developing a guidance package for a tactical munitions dispenser filled with anti-armor submunitions that can be used in all types of weather. These programs will dramatically increase our capacity to attack and destroy critical targets in the crucial opening days of a short-warning conflict.

In addition, two other force enhancements are important to improving our ability to respond to the demanding requirement of two nearly simultaneous MRCs:

Reserve Component Forces. We have undertaken several initiatives to improve the readiness and flexibility of Army National Guard combat units and other Reserve Component forces in order to make them more readily available for MRCs and other tasks. For example, one important role for combat elements of the Army National Guard is to provide forces to supplement active divisions, should more ground combat power be needed to deter or fight a second MRC. In the future, Army National Guard combat units will be better trained, more capable, and more ready. If mobilized early during a conflict, brigade-sized units could provide extra security and flexibility if a second conflict arose while the first was still going on. In addition, the Navy plans to increase the capability and effectiveness of its Navy/Marine Corps Reserve Air Wing through the introduction of a reserve/training aircraft carrier.

Allied Military Capabilities. We will continue to help our allies in key regions improve their own defense capabilities. For example, we are assisting South Korea in its efforts to modernize its armed forces and take on greater responsibility for its own defense — including conclusion of an agreement to co-produce F-16 aircraft.

In Southwest Asia, we are continuing to improve our defense ties with our friends and allies in the region through defense cooperation agreements, more frequent joint and combined exercises, equipment prepositioning, frequent force deployments, and security assistance. We are also providing modern weapons, such as the M1A2 tank to Kuwait and the Patriot system to Kuwait and Saudi Arabia, to improve the self-defense capabilities of our friends and allies in the Gulf region.

Peace Enforcement and Intervention Operations

The second set of operations for which we must shape and size our forces includes peace enforcement and intervention. The types, numbers, and sophistication of weapons in the hands of potential adversaries in such operations can vary widely, with enforcement-type operations being the most demanding. For planning purposes, we assume that the threat we would face would include a mix of regular and irregular forces possessing mostly light weapons, supplemented by moderately sophisticated systems, such as antitank and antiship guided missiles, surface-to-air missiles, land and sea mines, T-54 and T-72-class tanks, armored personnel carriers, and towed artillery and mortars. Adversary forces might also possess a limited number of mostly older combat aircraft (e.g., MiG-21s, 23s), a few smaller surface ships, (e.g., patrol craft), and perhaps a few submarines.

In most cases, U.S. involvement in peace enforcement operations would be as part of a multinational effort under the auspices of the United Nations or another international body. U.S. and coalition forces would have several key objectives in a peace enforce-

ment or intervention operation, each of which would require certain types of combat forces to achieve:

- Forced entry into defended airfields, ports, and other facilities and seizing and holding these facilities.
- Controlling the movement of troops and supplies across borders and within the target country, including enforcing a blockade or quarantine of maritime commerce.
- Establishing and defending zones in which civilians are protected from external attacks.
- Securing protected zones from internal threats, such as snipers, terrorist attacks, and sabotage.
- Preparing to turn over responsibility for security to peacekeeping units and/or a reconstituted administrative authority.

The prudent level of forces that should be planned for a major intervention or peace enforcement operation is:

- 1 air assault or airborne division
- 1 light infantry division
- 1 Marine Expeditionary Brigade
- 1 – 2 carrier battle groups
- 1 – 2 composite wings of Air Force aircraft
- Special operations forces
- Civil affairs units
- Airlift and sealift forces
- Combat support and service support units
- 50,000 total combat and support personnel.

These capabilities can be provided largely by the same collection of general purpose forces needed for the MRCs, so long as those forces had the appropriate training needed for peacekeeping or peace enforcement. This means that the United States would have to forgo the option of conducting sizable peace enforcement or intervention operations at the same time it was fighting two MRCs.

Overseas Presence

The final set of requirements that we use to size general purpose forces are those related to sustaining the overseas presence of U.S. military forces. U.S. forces deployed abroad protect and advance our interests and perform a wide range of functions that contribute to our security.

The Bottom-Up Review reached a number of conclusions on the future size and shape of our overseas presence.

In Europe, we will continue to provide leadership in a reinvigorated NATO, which has been the bedrock of European security for over four decades. We plan to retain about 100,000 troops there — a commitment that will allow the United States to continue to play a leading role in the NATO alliance and provide a robust capability for multinational training and crisis response. This force will include about two and one-third wings of Air Force fighters and substantial elements of two Army divisions, along with a corps headquarters and other supporting elements. Equipment for bringing these in-place divisions to full strength will remain prepositioned in Europe, along with the equipment of one additional division that would deploy to the region in the event of conflict.

U. S. Army forces will participate in two multinational corps with German forces. Their training will focus on missions involving rapid deployment to conflicts outside of central Europe and "nontraditional" operations, such as peace enforcement, in addition to their long-standing mission of stabilization of central Europe. These missions might lead, over time, to changes in the equipment and configuration of Army units stationed in Europe. The Air Force will continue to provide unique theater intelligence, lift, and all-weather precision-strike capabilities critical to U.S. and NATO missions. In addition, U.S. Navy ships and submarines will continue to patrol the Mediterranean Sea and other waters surrounding Europe.

In Northeast Asia, we also plan to retain close to 100,000 troops. As recently announced by President

Clinton, our commitment to South Korea's security remains undiminished, as demonstrated by the one U.S. Army division consisting of two brigades and one wing of U.S. Air Force combat aircraft we have stationed there. In light of the continuing threat of aggression from North Korea, we have frozen our troop levels in South Korea and are modernizing South Korean and American forces on the peninsula. We are also exploring the possibility of prepositioning more military equipment in South Korea to increase our crisis-response capability. While plans call for the eventual withdrawal of one of our two Army brigades from South Korea, President Clinton recently reiterated that our troops will stay in South Korea as long as its people want and need us there.

On Okinawa, we will continue to station a Marine Expeditionary Force and an Army special forces battalion. In Japan, we have homeported the aircraft carrier *Independence*, the amphibious assault ship *Bellau Wood*, and their support ships. We will also retain approximately one and one-half wings of Air Force combat aircraft in Japan and Okinawa, and the Navy's Seventh Fleet will continue to routinely patrol the western Pacific.



U.S. F-15 fighter leads two Japanese Self Defense fighters.

In Southwest Asia, local sensitivities to a large-scale Western military presence on land necessitate heavier reliance on periodic deployments of forces, rather than routine stationing of forces on the ground. The Navy's Middle East Force of four to six ships,

which has been continuously on patrol in the Persian Gulf since 1945, will remain. In addition, we plan to have a brigade-sized set of equipment in Kuwait to be used by rotating deployments of U.S. forces that will train and exercise there with their Kuwaiti counterparts. We are also exploring options to preposition a second brigade set elsewhere on the Arabian peninsula.

These forces have been supplemented temporarily by several squadrons of land-based combat aircraft that have remained in the Gulf region since Operation Desert Storm and, along with other coalition aircraft, are now helping to enforce U.N. resolutions toward Iraq.

Another significant element of our military posture in Southwest Asia is the equipment prepositioned on ships that are normally anchored at Diego Garcia. In addition to a brigade-sized set of equipment for the Marine Corps, we have seven afloat prepositioning ships supporting Army, Air Force, and Navy forces.

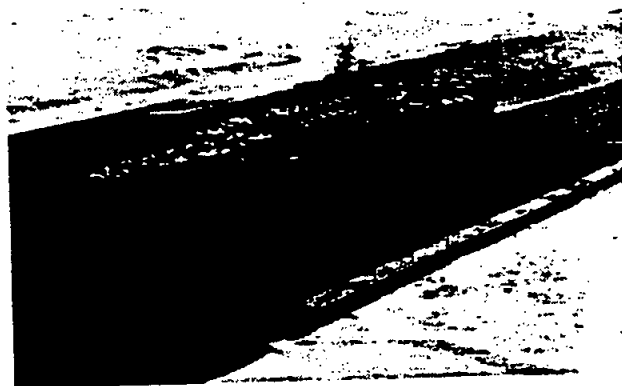
In Africa, we will continue important formal and informal access agreements to key facilities and ports which allow our forces to transit or stop on the African continent. We will also deploy forces to Africa, as in recent operations like Sharp Edge (Liberia) and Restore Hope (Somalia), when our interests are threatened or our assistance is needed and requested. Today, more than 4,000 U.S. troops remain deployed in Somalia as part of the U.N. force seeking to provide humanitarian assistance to that country.

In Latin America, our armed forces will help to promote and expand recent trends toward democracy in many countries. They will also continue to work in concert with the armed forces and police of Latin American countries to combat drug traffickers. The United States will also retain a military presence in Panama, acting as Panama's partner in operating and defending the Canal during the transition to full Panamanian control of the canal in 1999.

Naval Presence. Sizing our naval forces for two nearly simultaneous MRCs provides a fairly large and

robust force structure that can easily support other, smaller regional operations. However, our overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed to win two MRCs. The flexibility of our carriers, and their ability to operate effectively with relative independence from shore bases, makes them well suited to overseas presence operations, especially in areas such as the Persian Gulf, where our land-based military infrastructure is relatively underdeveloped. For these reasons, the force of carriers, amphibious ships, and other surface combatants in the Clinton-Aspin defense plan was sized based on the exigencies of overseas presence, as well as the MRCs.

U.S. Navy and Marine forces play important roles in our approach to overseas presence in these three regions, as well as others. In recent years, we have sought to deploy a sizable U.S. naval presence — generally, a carrier battle group accompanied by an amphibious ready group — more or less continuously in the waters off Southwest Asia, Northeast Asia, and Europe (most often, in the Mediterranean Sea). However, in order to avoid serious morale and retention problems that can arise when our forces are asked to remain deployed for excessively long periods, we will experience some gaps in carrier presence in these areas in the future.



The aircraft carrier USS Dwight D. Eisenhower transiting the Suez Canal.

In order to avoid degradation in our regional security posture, we have identified a number of ways to fill these gaps and to supplement our posture even when carriers are present. For example, in some circumstances, we may find it possible to center naval expeditionary forces around large-deck amphibious assault ships carrying AV-8B attack jets and Cobra attack helicopters, as well as a 2,000-man Marine Expeditionary Unit. Another force might consist of a Tomahawk sea-launched cruise missile-equipped Aegis cruiser, a guided missile destroyer, attack submarines, and P-3 land-based maritime patrol aircraft.

In addition to these "maritime" approaches to sustaining overseas presence, a new concept is being developed that envisions using tailored joint forces to conduct overseas presence operations. These "Adaptive Joint Force Packages" could contain a mix of air, land, special operations, and maritime forces tailored to meet a theater commander's needs. These forces, plus designated backup units in the United States, would train jointly to provide the specific capabilities needed on station and on call during any particular period. Like maritime task forces, these joint force packages will also be capable of participating in combined military exercises with allied and friendly forces.

Together, these approaches will give us a variety of ways to manage our overseas presence profile, balancing carrier availability with the deployment of other types of units. Given this flexible approach to providing forces for overseas presence, we can meet the needs of our strategy with a fleet of eleven active aircraft carriers and one reserve/training carrier.

Strategic Nuclear Forces

The changing security environment presents us with significant uncertainties and challenges in planning our strategic nuclear force structure. In light of the dissolution of the Warsaw Pact, the break-up of the Soviet Union, the conclusion of the START I and II treaties, and our improving relationship with Russia, the threat of massive nuclear attack on the United States is lower than at any time in many years.

However, a number of issues affecting our future strategic nuclear posture must still be addressed. Tens of thousands of nuclear weapons continue to be deployed on Russian territory and on the territory of three other former Soviet republics. Even under START II, Russia will retain a sizable residual nuclear arsenal. And, despite promising trends, the future political situation in Russia remains highly uncertain.



B-2 bombers being refueled by KC-10 tanker.

In addition, many obstacles must be overcome before the ratification of START II, foremost of which are Ukrainian ratification of START I and Ukraine's and Kazakhstan's accession to the Nuclear Nonproliferation Treaty as nonnuclear-weapon states — a condition required by Russia prior to implementing START I. Moreover, even if these obstacles can be overcome, implementation of the reductions mandated in START I and II will not be completed for almost 10 years. Thus, while the United States has already removed more than 3,500 warheads from ballistic missile systems slated for elimination under START I (some 90 percent of the total required), in light of current uncertainties, we must take a measured approach to further reductions.

Two principal guidelines shape our future requirements for strategic nuclear forces: to provide an effective deterrent while remaining within START I/II limits, and to allow for additional forces to be reconstituted, in the event of a threatening reversal of events.

The Bottom-Up Review did not address nuclear force structure in detail. As a follow-up to the Bottom-Up review, a comprehensive study of U.S. nuclear forces is being conducted. For planning purposes, we are evolving toward a future strategic nuclear force that by 2003 will include:

- 18 Trident submarines equipped with C-4 and D-5 missiles.
- 500 Minuteman III missiles, each carrying a single warhead.
- Up to 94 B-52H bombers equipped with air-launched cruise missiles and 20 B-2 bombers.

Conclusion

At the conclusion of its comprehensive assessment of future U.S. defense needs, the Bottom-Up Review determined that the reduced force structure shown in Figure 6, which will be reached by about the end of the

decade, can carry out our strategy and meet our national security requirements.

This force structure meets our requirements for overseas presence in peacetime and a wide range of smaller-scale operations. It will also give the United States the capability to meet the most stressing situation we may face -- the requirement to fight and win two major regional conflicts occurring nearly simultaneously.

In addition, this force structure provides sufficient capabilities for strategic deterrence and defense. It also provides sufficient forces, primarily Reserve Component, to be held in strategic reserve and utilized if and when needed. For example, they could deploy to one or both MRCs, if operations do not go as we had planned. Alternatively, these forces could be used to "backfill" for overseas presence forces redeployed to an MRC. Finally, this force structure also meets an important new criterion for our forces — flexibility to deal with the uncertain nature of the new dangers.

U.S. Force Structure – 1999

Army	<ul style="list-style-type: none"> • 10 divisions (active) • 5+ divisions (reserve)
Navy	<ul style="list-style-type: none"> • 11 aircraft carriers (active) • 1 aircraft carrier (reserve/training) • 45-55 attack submarines • 346 ships
Air Force	<ul style="list-style-type: none"> • 13 fighter wings (active) • 7 fighter wings (reserve) • Up to 184 bombers
Marine Corps	<ul style="list-style-type: none"> • 3 Marine Expeditionary Forces • 174,000 personnel (active endstrength) • 42,000 personnel (reserve endstrength)
Strategic Nuclear Forces (by 2003)	<ul style="list-style-type: none"> • 18 ballistic missile submarines • Up to 94 B-52 H bombers • 20 B-2 bombers • 500 Minuteman III ICBMs (single warhead)

Figure 6

Commander-in-Chief, Pacific Air Forces	2
Commander-in-Chief, US Southern Command	5
Commander-in-Chief, US Space Command	3
Commander-in-Chief, US Special Operations Command	3
Commander-in-Chief, Strategic Air Command	3
Commander-in-Chief, US Transportation Command	20
Deputy Director for Intelligence, Central Intelligence Agency	3
National Intelligence Officer for General Purpose Forces, National Intelligence Council ...	3
Director, Defense Intelligence Agency	3
Director, Joint Staff	2
Director for Manpower and Personnel, Joint Staff	2
Director for Operations, Joint Staff	4
Director for Logistics, Joint Staff	20
Director for Strategic Plans and Policy, Joint Staff	6
Director for Command, Control, Communications, and Computers, Joint Staff	6
Director for Operational Plans and Interoperability, Joint Staff	15
Director for Force Structure, Resources, and Assessment, Joint Staff	100
Legal and Legislative Counsel to the Chairman, Joint Chiefs of Staff	50
Special Assistant to the Chairman, Joint Chiefs of Staff, for Public Affairs	5
Secretary, Joint Staff	6
Department of Defense Inspector General	6
National Defense University	2
Industrial College of the Armed Forces	2
Army War College	2
Navy War College	2
Air War College	2



Bottom-Up Review

1 September 1993

Les Aspin
Secretary of Defense

Colin Powell, General, USA
Chairman, Joint Chiefs of Staff



New Dangers

Bottom
Up
Review

- **Proliferation of Nuclear Weapons and Other Weapons of Mass Destruction, Delivery Systems**
 - Other Countries - North Korea, Iran, Iraq, etc.
 - Former Soviet Union
- **Regional Dangers**
 - Large-Scale Aggression, Intimidation
 - Ethnic, Religious, and Internal Conflict
 - State-Sponsored Terrorism
- **Dangers to Democracy, Reform and Civil Order**
 - In the Former Soviet Empire
 - In Developing World
- **Dangers of a Weak Economy**
 - Lack of Domestic Prosperity
 - Lack of International Competitiveness
 - Lack of Environmental Security



Bottom - Up Review: Analytic Process

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/Prepositioning
- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Unprecedented Collaborative Effort

Bottom
Up
Review

Bottom - Up Review

OSD Policy

Marine Corps

OSD
Acquisition

Air Force

Joint Staff

Navy

Steering Group

Army

- USDA - Chair - Mr Deutch
- VCJCS - ADM Jeremiah
- SR&R
- PA&E
- Personnel & Readiness
- Reserve Affairs
- Comptroller
- Services

- OSD
- Program Analysis & Evaluation
 - Comptroller
 - Personnel & Readiness
 - Reserve Affairs
 - C3I

CINCs



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

- *Defense Strategy*
- *Defense Planning Assumptions*
- *Force Sizing Criteria*
- *Modernization Criteria*
- *Role of Defense - Initiatives*
- *Management of Infrastructure and Defense Foundations*



Bottom - Up Review: Force Structure

Bottom
Up
Review

Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/Prepositioning
- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES





Purpose of U.S. Armed Forces

Bottom
Up
Review

We The People ...

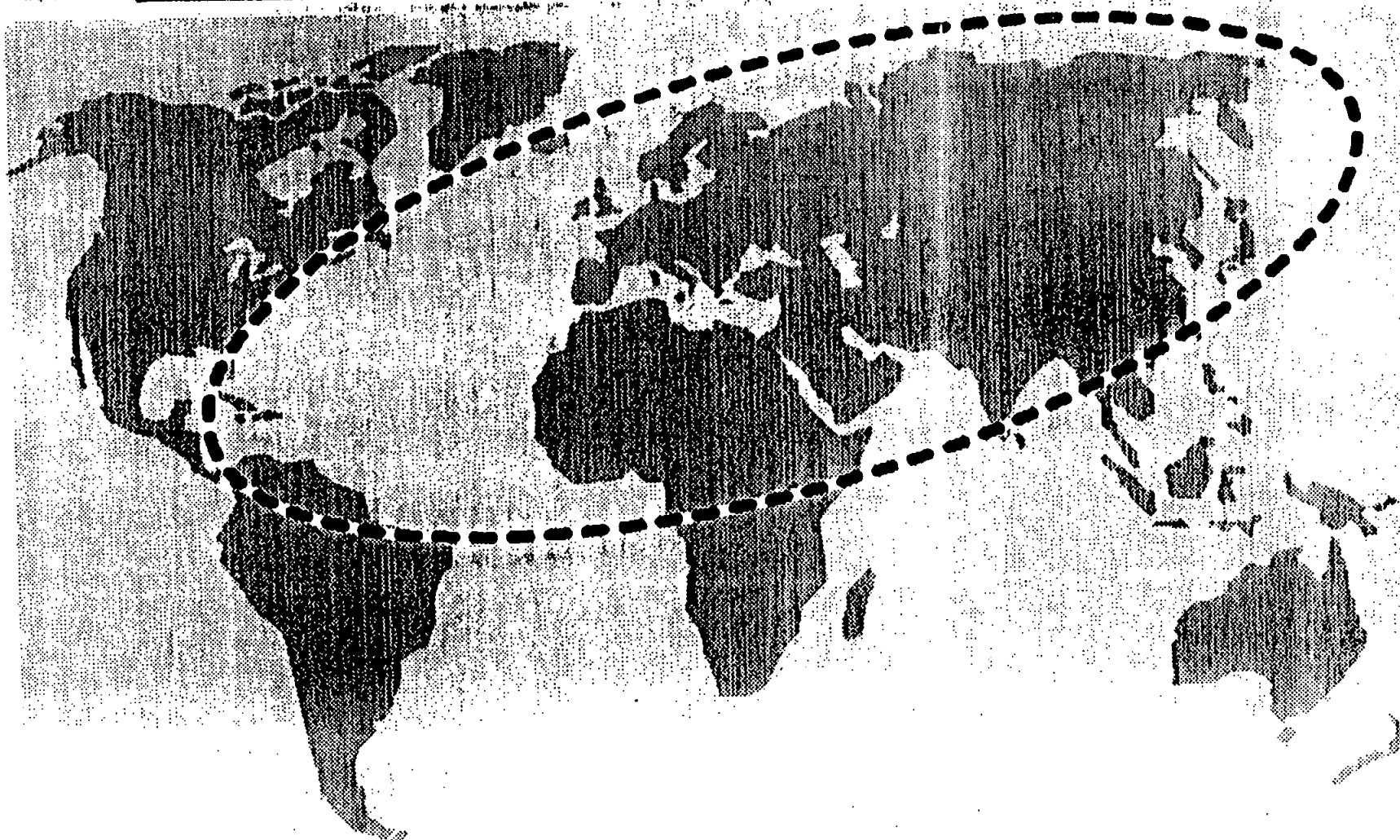
*...To Provide for the
Common Defense...*

- **To Fight and Win
the Nation's Wars**



Cold War Force Planning

Bottom
Up
Review





Assumptions

Bottom
Up
Review

Cold War

New World

Threat Forces

Soviet Empire

Iraq, Korea ??

Warning Time

One to Two Weeks

One Day 1 Years

Coalition

Known

Depends on Issue

Conflict Environment

Europe/Heavy Force

Tropics to Desert

Mobility Factors

Crossing the Atlantic

Global

Risk

Nuclear Threshold

Spread of Conventional
and WMD Dangers

Maintenance & Support

Robust

Right-Sized to
Force Structure

Sustainability

Years

Months

Base Structure

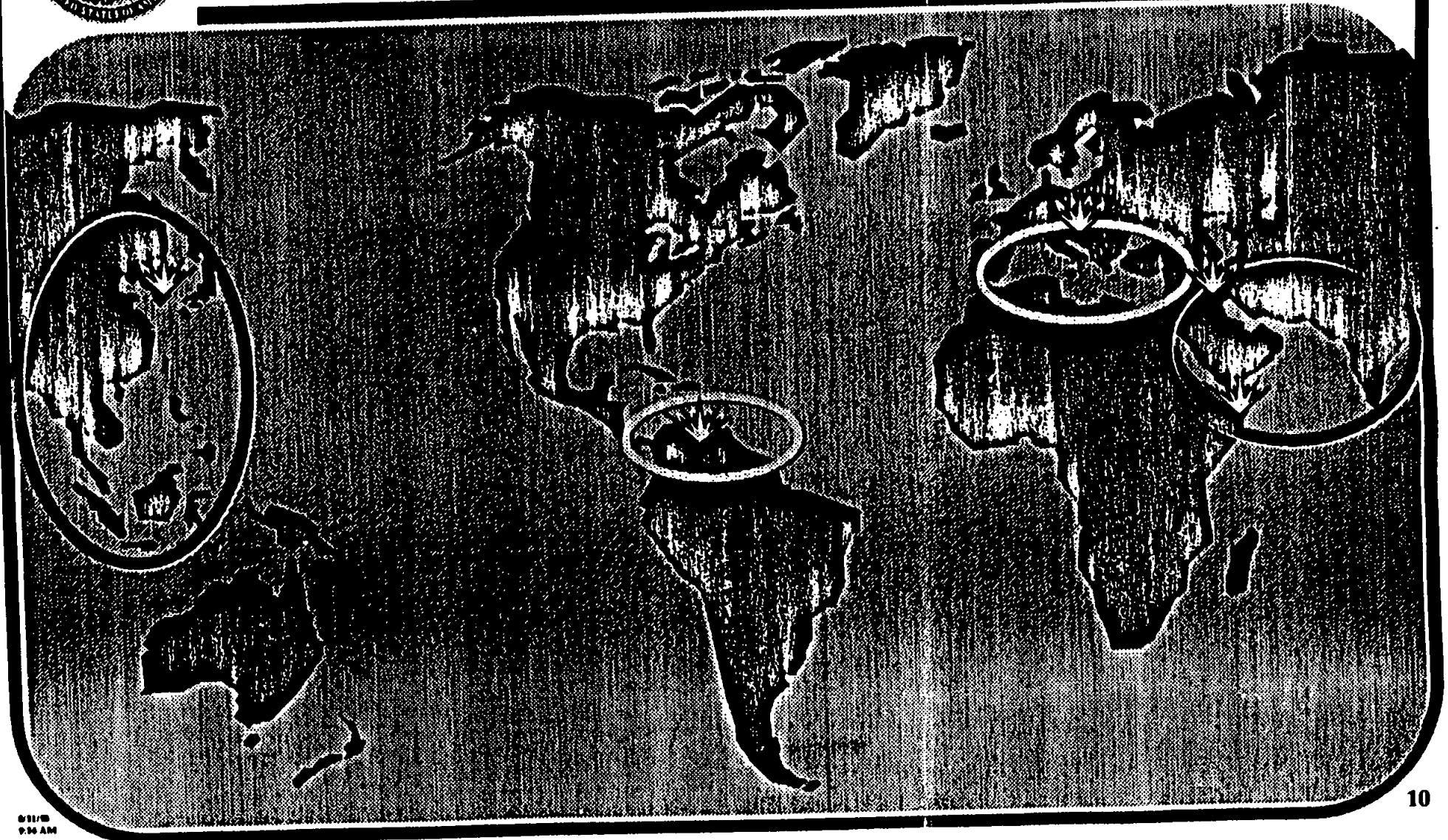
Robust

Right-Sized to
Force Structure



New World Regional Challenges

Bottom
Up
Review



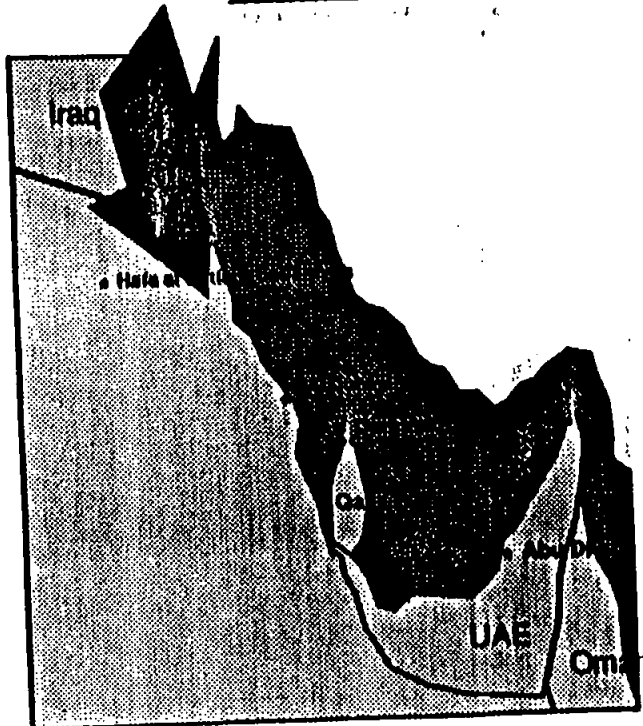


Force Sizing Major Regional Conflicts

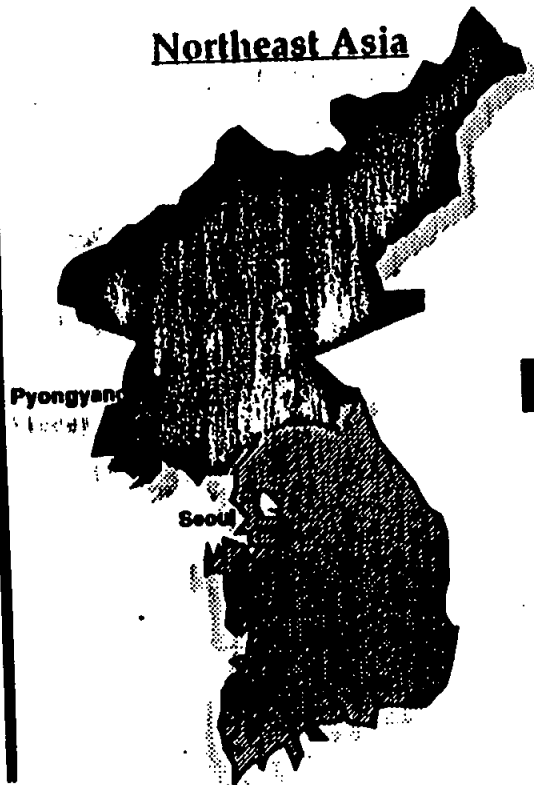
Bottom
Up
Review

Assessment

Southwest Asia

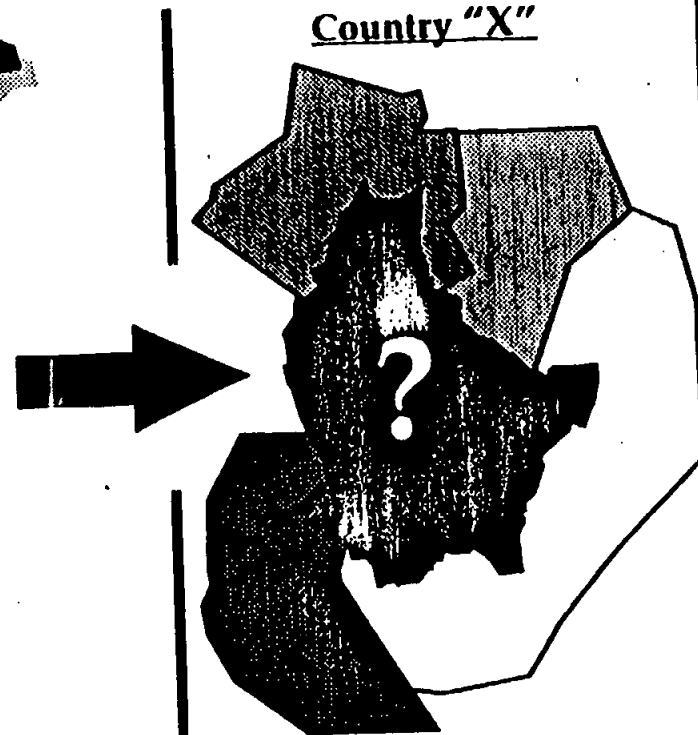


Northeast Asia



Employment

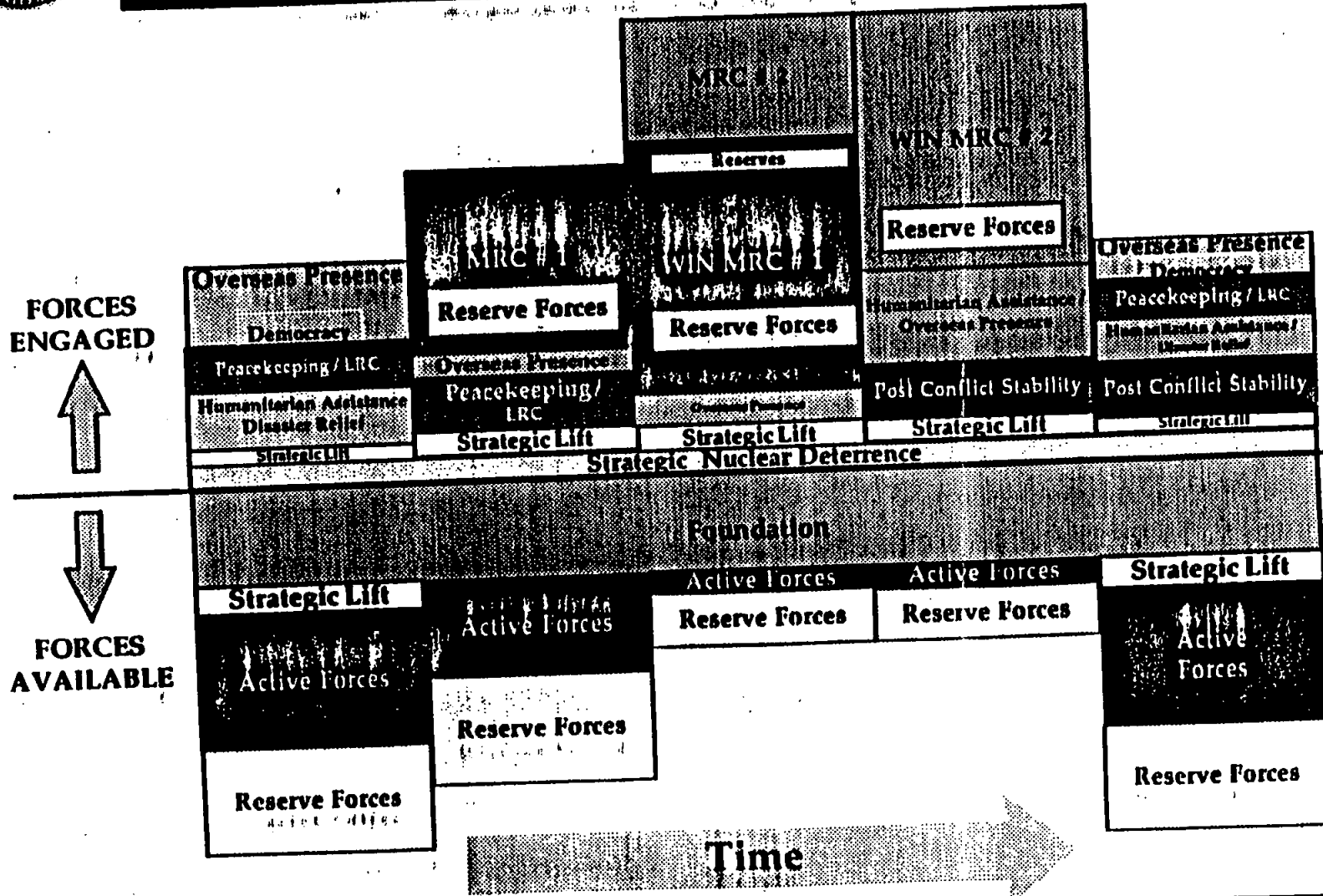
Country "X"





Conflict Dynamics

Bottom
Up
Review





Winning Two Nearly Simultaneous Major Regional Conflicts

Bottom
Up
Review

Campaign Phases

Major Regional
Conflict #1

Halt the
Invading Force

Build up Forces;
Conduct
Air Campaign

Pinpoint Decisive
Counteroffensive

Provide for
Post-War
Stability

Deploy and Sustain Forces

Major Regional
Conflict #2

Halt the
Invading Force

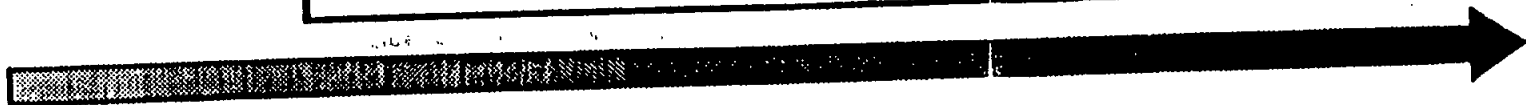
Build up Forces;
Conduct
Air Campaign

Pinpoint Decisive
Counteroffensive

Provide for
Post-War
Stability

Deploy and Sustain Forces

Time





Major Regional Conflict Force Options

Bottom
Up
Review

1

2

3

4

STRATEGY

	Win 1 Major Regional Conflict	Win 1 Major Regional Conflict with Hold in 2nd	Win in 2 Nearly Simultaneous Major Regional Conflicts	Win in 2 Nearly Simultaneous Major Regional Conflicts +
Forces:				
Army	<ul style="list-style-type: none"> • 8 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 15 Reserve Enhanced Readiness Brigades 	<ul style="list-style-type: none"> • 12 Active Divisions • 8 Reserve Division Equivalents
Navy	<ul style="list-style-type: none"> • 8 Carrier Battlegroups 	<ul style="list-style-type: none"> • 10 Carrier Battlegroups 	<ul style="list-style-type: none"> • 11 Carrier Battlegroups • 1 Reserve/training Carrier 	<ul style="list-style-type: none"> • 12 Carrier Battlegroups
Marine Corps	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division
Air Force	<ul style="list-style-type: none"> • 10 Active Fighter Wings • 6 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 14 Active Fighter Wings • 10 Reserve Fighter Wings
			Force Enhancements	



Critical Force Enhancements

Bottom
Up
Review

- Additional Army prepositioned equipment
- Additional airlift/sealift
- Improved anti-armor and precision-guided munitions
- More early-arriving Navy air
- Improve Army National Guard combat brigade readiness
- Improve Army Guard and reserve support force readiness
- Improved Command, Control, Communications and Intelligence assets
- Retained Marine Corps endstrength



Overseas Presence

Bottom
Up
Review

- Europe - About 100,000 troops
- East Asia - About 98,000 troops
 - Korea
 - 2 Army brigades
 - Air Force wing
 - Expanded prepositioning
 - Japan
 - Carrier battle group
 - Amphibious ready group
 - Marine Expeditionary Force
 - Marine airwing
 - Air Force wings
- Southwest Asia
 - Periodic deployments of naval, air and ground forces
 - Expanded prepositioning
- Global Maritime Presence

Objectives

- Display U.S. commitment
- Deter regional aggression
- Prevent regional arms races
- Improve coalition effectiveness
- Provide initial response



Peacekeeping and Other Military Operations

Bottom
Up
Review

- Disaster Relief
- Humanitarian Assistance
- Peacekeeping
- Peace Enforcement
- Embassy Evacuations
- Lesser Regional Conflicts

*Forces for peacekeeping and peace enforcement
need specialized training, doctrine and
equipment*



U.S. Force Structure

Bottom
Up
Review

Forces	FY 1990	FY 1993	Bottom-Up Review
Army Active Divisions National Guard Division Equivalents	18 10	14 6 (+2 Cadre)	10 5+
Navy Aircraft Carriers Active/Reserve Airwings Ships	15 + 1 13 / 2 546	13 + 0 11 / 2 443	11 + 1 10 / 1 346
Air Force Active Fighter Wings Reserve Fighter Wings	24 12	16 12	13 7
Marine Corps Active Endstrength Reserve Endstrength	197,000 44,000	182,000 42,000	174,000 42,000
Strategic Nuclear Forces Ballistic Missile Subs Strategic Bombers (PAA) ICBMs	34 301 1000	22 201 787	18 Up to 184 500



Bottom - Up Review: Modernization

Bottom
Up
Review

Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/Prepositioning
- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES





Modernization

Bottom
Up
Review

- **Ballistic Missile Defense**
- **Theater Air**
- **Attack Submarines**
- **Aircraft Carriers**
- **Space Launch**
- **Military Satellite Communication**
- **Attack and Reconnaissance Helicopters**



Key Considerations

Bottom
Up
Review

- **Driven by New Dangers and New Strategy**
- **Prospects for Technology**
- **Different Nuclear Threat**
- **Industrial Base**
- **Acquisition Strategy**
- **International Cooperation**

**Consideration of Effectiveness and
Cost of Alternatives**



Ballistic Missile Defense (BMD) Program Review

Bottom
Up
Review

Problems:

- Regional theater ballistic missile threat here today
- New ballistic threat to US may emerge in future
- How much Theater Missile Defense (TMD)?
- Need for National Missile Defense (NMD)?
- How to reconcile programs with ABM treaty?

Alternatives:

- Core Theater Missile Defense (e.g. Patriot upgrades, etc.) through robust Theater Missile Defense
- National Missile Defense - technology program or system development or deployed system



TMD / NMD Program Options

Bottom
Up
Review

Current FY 95 -99 is \$39B

TMD \ NMD		Technology Program		Tech Demo	Acquisition Program	
		\$ 2 Billion Without RE	\$ 3 Billion With RE	\$ 7 Billion	\$ 8 Billion	\$ 10 Billion
PAC-3 + CORE + THAAD + AEGIS / SM-2 Block IVA + BM / C	Additional TMD Investment					
	e.g. Sea-based Upper Tier		12 3			12 10 (25)
	Corps Sam			10 7 (20)		
	Ascent Phase	9 2	(15)			9 10 (23)
	\$ 14B					
	\$ 12B					
	\$ 10B					
	\$ 9B					

Costs are FY 95 - 99 FY \$ in Billions from CAIG

○ = Total Program (All Options Include Approximately \$3B for FOT and R&S)

Y = TMD

Z = NMD

□ = Final Options



Ballistic Missile Defense (BMD) Program Review

**Bottom
Up
Review**

Selected Program:

- **Emphasizes theater missile defense development and deployment**
- **Focuses National Missile Defense on technology development**
- **Complies with ABM treaty**
- **Reduces BMD budget by \$ 21 billion**



Theater Air

Bottom
Up
Review

- **The Problem:**
 - **Define Theater Air Capability that Meets Military Need at Affordable Costs**

- **Current Program**
 - **Too Many New Airplanes**
 - » **F-22, A/F-X, F/A-18E/F, MRF**
 - **Aging Fleet**
 - » **A-6, F-15C, F-14**
 - **Too Large Force Structure**



Theater Air

Bottom
Up
Review

Decisions:

- Proceed with F/A-18E/F (2001); ground attack upgrades for F-14; retire A-6; cancel F/A-18C/D after 1997
- Proceed with F-22 (2003) with ground attack capability
- Cancel A/F-X, MRF now; cancel F-16 after FY94
- Joint Advanced Strike Technology Program
 - Critical components
 - Technology demonstrators
 - Joint munitions
- Conventional capabilities for B-1, B-2
- Standoff Weapons for deep strike / hard targets



Attack Submarine Program Review

Bottom
Up
Review

Problem:

- Maintaining capacity to build submarines we need

Questions:

- When do we need to build submarines again?
- What is the best way to get the new submarines?

Alternatives:

- Shutdown, then restart production
- Bridge production



Attack Submarine Program Review

Bottom
Up
Review

Decisions:

- Complete third SSN 21 at Groton, CT to maintain two nuclear capable shipyards
- Develop and build New Attack Submarine (NAS)



Carrier Force Levels, Warfighting Risk and Overseas Presence

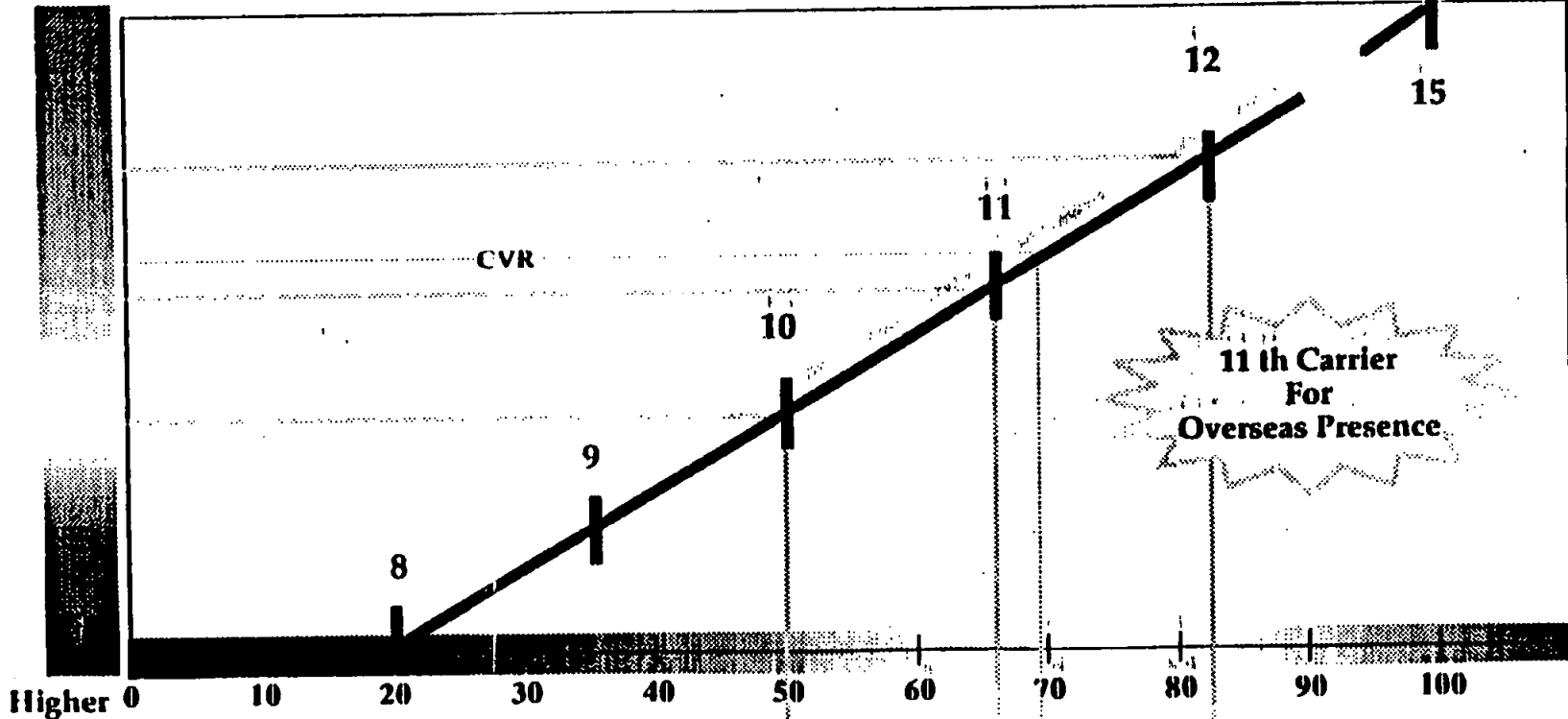
Bottom
Up
Review

Warfighting Risk

Carrier Force Level

Lower

Win 2 Nearly Simultaneous MRCs

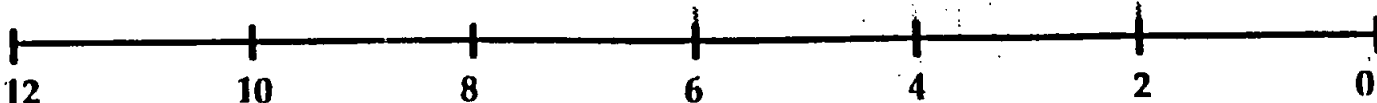


11th Carrier
For
Overseas Presence

Higher 0 10 20 30 40 50 60 70 80 90 100

Percent Presence in Two Regions with Full-Time Presence in Third Region

Average gap
(Months) in
Other 2 Regions





Bottom - Up Review: Initiatives

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
- Overseas Presence
- Strategic Mobility/Prepositioning

- Deter the Use of WMD

Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
- Attack Helicopters

Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/ Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Initiatives

Bottom
Up
Review

- **Cooperative Threat Reduction**
- **Counter New Nuclear Dangers**
- **FSU Defense/Military Partnership**
- **Environmental Security**
- **Dual Use Technology**



Bottom - Up Review: Foundations

Bottom
Up
Review

POST-COLD WAR
WORLD:
NEW
DANGERS,
OPPORTUNITIES



STRATEGY TO
ADDRESS
DANGERS,
SEIZE
OPPORTUNITIES



Force Structure Options

- Major Regional Conflict
- Reserve Components
- Peace Enforcement Operations
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Modernization Choices

- Ballistic Missile Defense
- Theater Air
- Submarines
- Aircraft Carriers
- Space Lift
- Military Satellite Comms
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Initiatives

- Cooperative Threat Reduction
- Counter New Nuclear Dangers
- Democratization/Humanitarian Ops
- Defense Reinvestment

Foundations

- Readiness
- Acquisition Reform
- Infrastructure



Infrastructure

Bottom
Up
Review

Eliminate Excess Infrastructure

- Close or realign bases
- Consolidate training, maintenance and supply
- Reduce costly overhead

**Reform the defense acquisition
process**



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

FY95 - 99

- **Provides** additional Army prepositioned equipment
- **Enhances** readiness of Army National Guard combat brigades
- **Retains** additional Marine Corps endstrength
- **Proposes** New Initiatives to meet New Dangers
- **Develops** V-22
- **Provides** precision strike capabilities for F-14, F-22, B-1, B-2
- **Establishes** Joint Advanced Strike Technology Program for next generation aircraft
- **Preserves** submarine industrial base
- **Preserves** carrier industrial base
- **Begins** acquisition reform
- **Properly sizes** support establishment
- **Restructures** Ballistic Missile Defense Program



Bottom-Up Review: What Does It Change?

Bottom
Up
Review

FY95 - 99

- **Reduces Infrastructure**
Reduces about 115,000 civilian personnel
- **Reduces about 160,000 active personnel**
- **Cancels A/FX**
- **Cancels MRF**
- **Cancels F-16 after FY94**
- **Cancels F/A-18C/D after FY97**
- **Retires A-6**
- **Cuts 2 active Army divisions**
- **Cuts 1 reserve Army division**
- **Cuts 3 active Air Force fighter wings**
- **Cuts 4 reserve Air Force fighter wings**
- **Cuts 1 active Navy airwing**
- **Cuts 1 reserve Navy airwing**
- **Cuts 1 aircraft carrier**
- **Reduces carrier force level to 11**
- **Cuts 55 surface ships and submarines**



Bottom-Up Review: What Does It Protect?

Bottom
Up
Review

"The men and women who serve under the American Flag will be the best trained, best equipped, best prepared fighting force in the world, so long as I am President."

**President Bill Clinton
February, 1993**

**Report
on the
Bottom-Up Review**

October 1993

MESSAGE FROM THE SECRETARY OF DEFENSE

In March 1993, I initiated a comprehensive review of the nation's defense strategy, force structure, modernization, infrastructure, and foundations. I felt that a department-wide review needed to be conducted "from the bottom up" because of the dramatic changes that have occurred in the world as a result of the end of the Cold War and the dissolution of the Soviet Union. These changes in the international security environment have fundamentally altered America's security needs. Thus, the underlying premise of the Bottom-Up Review was that we needed to reassess all of our defense concepts, plans, and programs from the ground up.

This final report on the Bottom-Up Review provides the results of that unprecedented and collaborative effort. It represents the product of hundreds of individuals' labor and dedication. It describes the extensive analysis that went into the review and the recommendations and decisions that emerged.

First and foremost, the Bottom-Up Review provides the direction for shifting America's focus away from a strategy designed to meet a global Soviet threat to one oriented toward the new dangers of the post-Cold War era. Chief among the new dangers is that of aggression by regional powers.

One of the central factors in our analysis was the judgment that the United States must field forces capable, in concert with its allies, of fighting and winning two major regional conflicts that occur nearly simultaneously. This capability is important in part because we do not want a potential aggressor in one region to be tempted to take advantage if we are already engaged in halting aggression in another. Further, sizing U.S. forces to fight and win two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat.

Our analysis showed that we can maintain a capability to fight and win two major regional conflicts and still make prudent reductions in our overall force structure — so long as we implement a series of critical force enhancements to improve our strategic mobility and strengthen our early-arriving antiarmor capability, and take other steps to ensure our ability to halt regional aggression quickly.

Second, the review's results demonstrate to our allies, friends, and potential foes alike that the United States will remain a world power in this new era. We are not going to withdraw from our involvement around the world. While we no longer need to prepare for global war, the new dangers to our interests are global. Our review spelled out what military forces and capabilities will be needed to meet the new dangers.

Finally, the review lays the foundation for what is needed to fulfill President Clinton's pledge to keep America's military the best-trained, best-equipped, best-prepared fighting force in the world.

Providing that foundation means making readiness our number one defense priority. I have directed that this emphasis on readiness be integrated into the entire defense planning, programming, and budgeting process. We will develop new measures and standards of readiness that fit the new and less predictable requirements of the post-Cold War era.

Fulfilling the President's pledge also means proceeding with a prudent program of selectively modernizing key weapon systems. To keep our technological superiority in a period of constrained resources, we must simplify and improve the acquisition process as we simultaneously exploit the tremendous advances occurring in American industry to maintain the quality and effectiveness of our military systems.

One way we will take advantage of technological advances while reducing research, development, and procurement costs is by launching a Joint Advanced Strike Technology (JAST) program. The JAST program will focus on developing common components — such as engines, avionics, materials, and munitions — that could be used with any future combat aircraft the nation decides to build. Faster incorporation of technological advances into weapons can provide significant advantages for U.S. forces against potential adversaries.

And we must keep faith with the men and women in America's armed forces who have made service to their country their life's work. People are at the heart of our armed forces, and we must not break our bond with them. We must continue to provide the full range and quality of support, training, and education that have made ours the most highly professional, trained, and motivated force in the world. We must also treat fairly those who are leaving the military, as well as the people and communities who have long supported our armed forces.

I am very proud of the work done by the men and women in the Department of Defense, both military and civilian, during the Bottom-Up Review. We all realize that there is still much more to be done. As you read this report, that effort has already begun.

A handwritten signature in black ink, appearing to read "J. R. Spin". The signature is stylized with a large, looped initial "J" and a cursive "Spin".

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SECTION I

NATIONAL SECURITY IN THE POST-COLD WAR ERA

Introduction

The Cold War is behind us. The Soviet Union is no longer. The threat that drove our defense decision-making for four and a half decades — that determined our strategy and tactics, our doctrine, the size and shape of our forces, the design of our weapons, and the size of our defense budgets — is gone.

Now that the Cold War is over, the questions we face in the Department of Defense are: How do we structure the armed forces of the United States for the future? How much defense is enough in the post-Cold War era?

Several important events over the past four years underscore the revolutionary nature of recent changes in the international security environment and shed light on this new era and on America's future defense and security requirements:

- In 1989, the fall of the Berlin Wall and the collapse of communism throughout Eastern Europe precipitated a strategic shift away from containment of the Soviet empire.
- In 1990, Iraq's brutal invasion of Kuwait signaled a new class of regional dangers facing America — dangers spurred not by a global, empire-building ideological power, but by rogue leaders set on regional domination through military aggression while simultaneously pursuing nuclear, biological, and chemical weapons capabilities. The world's response to Saddam's invasion also demonstrated the potential in this new era for broad-based, collective military action to thwart such tyrants.
- In 1991, the failed Soviet coup demonstrated the Russian people's desire for democratic change and hastened the collapse of the Soviet Union as a national entity and military foe.

In the aftermath of such epochal events, it has become clear that the framework that guided our security policy during the Cold War is inadequate for the future. We must determine the characteristics of this new era, develop a new strategy, and restructure our armed forces and defense programs accordingly. We cannot, as we did for the past several decades, premise this year's forces, programs, and budgets on incremental shifts from last year's efforts. We must rebuild our defense strategy, forces, and defense programs and budgets from the bottom up.

The purpose of the Bottom-Up Review was to define the strategy, force structure, modernization programs, industrial base, and infrastructure needed to meet new dangers and seize new opportunities.

An Era of New Dangers

Most striking in the transition from the Cold War is the shift in the nature of the dangers to our interests, as illustrated in Figure 1.

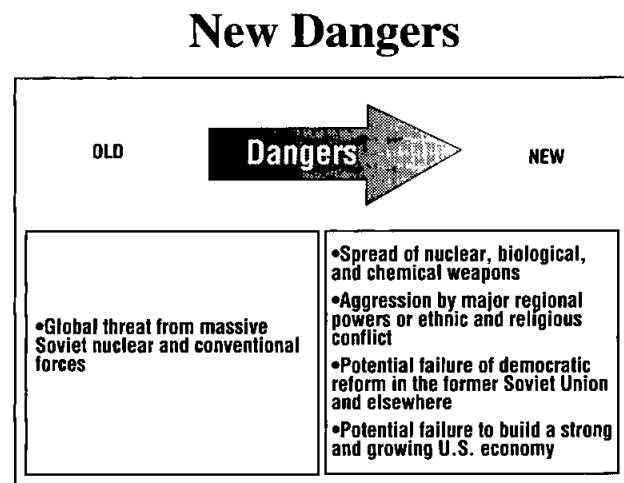


Figure 1

The new dangers fall into four broad categories:

- ***Dangers posed by nuclear weapons and other weapons of mass destruction***, including dangers associated with the proliferation of nuclear, biological, and chemical weapons as well as those associated with the large stocks of these weapons that remain in the former Soviet Union.
- ***Regional dangers***, posed primarily by the threat of large-scale aggression by major regional powers with interests antithetical to our own, but also by the potential for smaller, often internal, conflicts based on ethnic or religious animosities, state-sponsored terrorism, or subversion of friendly governments.
- ***Dangers to democracy and reform***, in the former Soviet Union, Eastern Europe, and elsewhere.
- ***Economic dangers*** to our national security, which could result if we fail to build a strong, competitive and growing economy.

Our armed forces are central to combating the first two dangers and can play a significant role in meeting the second two. Our predictions and conclusions about the nature and characteristics of these dangers will help mold our strategy and size and shape our future military forces.

An Era of New Opportunities

Today, there is promise that we can replace the East-West confrontation of the Cold War with an era in which the community of nations, guided by a common commitment to democratic principles, free-market economics, and the rule of law, can be significantly enlarged.

As Figure 2 shows, beyond new dangers there are new opportunities: realistic aspirations that, if we dedicate ourselves to pursue worthy goals, we can reach a world of greater safety, freedom, and prosperity. Our armed forces can contribute to this objective. In brief, we see new opportunities to:

- Expand and adapt our existing security partnerships and alliances and build a larger community of democratic nations.
- Promote new regional security arrangements and alliances to improve deterrence and reduce the potential for aggression by hostile regional powers.
- Implement the dramatic reductions in the strategic nuclear arsenals of the United States and the former Soviet Union achieved in the Strategic Arms Reduction Talks (START) I and II treaties.
- Protect and advance our security with fewer resources, freeing excess resources to be invested in other areas vital to our prosperity.

New Opportunities

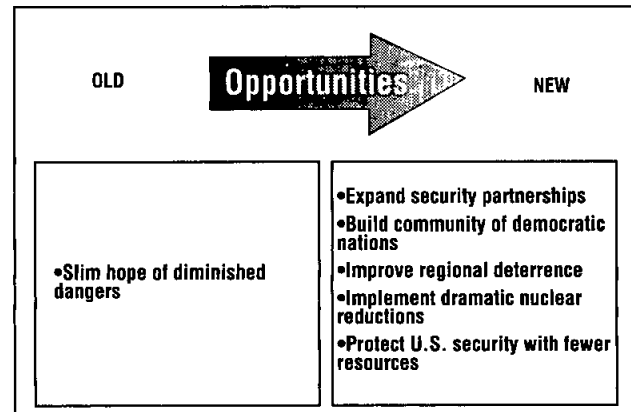


Figure 2

Enduring U.S. Goals

Despite these revolutionary changes in our security environment, the most basic goals of the United States have not changed. They are to:

- Protect the lives and personal safety of Americans, both at home and abroad.
- Maintain the political freedom and independence of the United States with its values, institutions, and territory intact.

- Provide for the well-being and prosperity of the nation and its people.

In addition to these fundamental goals, we have core values that we have an interest in promoting. These include democracy and human rights, the peaceful resolution of conflict, and the maintenance of open markets in the international economic system. The advancement of these core values contributes significantly to the achievement of our fundamental national goals: our nation will be more secure in a world of democratic and pluralistic institutions, and our economic well-being will be enhanced by the maintenance of an open international economic system.

A Strategy of Engagement, Prevention, and Partnership

To protect and advance these enduring goals in this new era, the United States must pursue a strategy characterized by continued political, economic, and military engagement internationally. Such an approach helps to avoid the risks of global instability and imbalance that could accompany a precipitous U.S. withdrawal from security commitments. It also helps shape the international environment in ways needed to protect and advance U.S. objectives over the longer term, and to prevent threats to our interests from arising.

Moreover, we must adapt our defense policies and alliances to meet fast-moving changes both at home and abroad. We and our allies need to modify and build upon the basic bargains upon which our security relationships are based, and begin now to define and create new mutual expectations, arrangements, and institutions to help manage our affairs in the coming decades.

This strategy of engagement will be defined by two characteristics: prevention and partnership. It advocates preventing threats to our interests by promoting democracy, economic growth and free markets, human dignity, and the peaceful resolution of conflict, giving first priority to regions critical to our interests. Our new strategy will also pursue an international partnership

for freedom, prosperity, and peace. To succeed, this partnership will require the contributions of our allies and will depend on our ability to establish fair and equitable political, economic, and military relationships with them.

Our primary task, then, as a nation is to strengthen our society and economy for the demanding competitive environment of the 21st century, while at the same time avoiding the risks of precipitous reductions in defense capabilities and the overseas commitments they support. Such reductions could defeat attempts to improve both our overall security situation and our prosperity.

Sustaining and Adapting Alliances

Building a coalition of democracies will be central to achieving this overarching objective. The common values and objectives of democratic nations provide a basis for cooperation across a broad spectrum of policy areas, from deterrence and defense against aggression to the promotion of individual and minority rights. We can strive to make the most of this commonality of values and interests by expanding and adapting mechanisms to facilitate policy coordination and cooperation among democracies.

A continued willingness on the part of the United States to act as a security partner and leader will be an important factor in sustaining cooperation in many areas. Our strategy therefore envisions that the United States will remain the leading security partner in Europe, East Asia, the Near East, and Southwest Asia. However, we must find ways to sustain our leadership at lower cost. For their part, our allies must be sensitive to the linkages between a sustained U.S. commitment to their security on the one hand, and their actions in such areas as trade policy, technology transfer, and participation in multinational security operations on the other.

Finally, we must encourage the spread of democratic values and institutions. In this regard, the collapse of the former Soviet empire presents an unparal-

leed opportunity to bring peace and prosperity to millions of people who have expressed a clear desire to join the community of democracies.

Objectives and Methodology of the Bottom-Up Review

We undertook the Bottom-Up Review to select the right strategy, force structure, modernization programs, and supporting industrial base and infrastructure to provide for America's defense in the post-Cold War era

Figure 3 shows the step-by-step process we used to develop key assumptions, broad principles, and general objectives and translate them into a specific plan for our strategy, forces, and defense resources. These steps included:

- Assessing the post-Cold War era, and particularly the new dangers and opportunities it presents.
- Devising a defense strategy to protect and advance our interests in this new period.
- Constructing building blocks of forces to implement the strategy.
- Combining these force building blocks to produce options for our overall force structure.
- Complementing the force structure with weapons acquisition programs to modernize our forces, defense foundations to sustain them, and policy initiatives to address new dangers and take advantage of new opportunities.

With the Bottom-Up Review now complete, we will utilize its results to build a multiyear plan for America's future security, detailing the forces, programs, and defense budgets the United States needs to protect and advance its interests in the post-Cold War era.

Methodology of the Bottom-Up Review

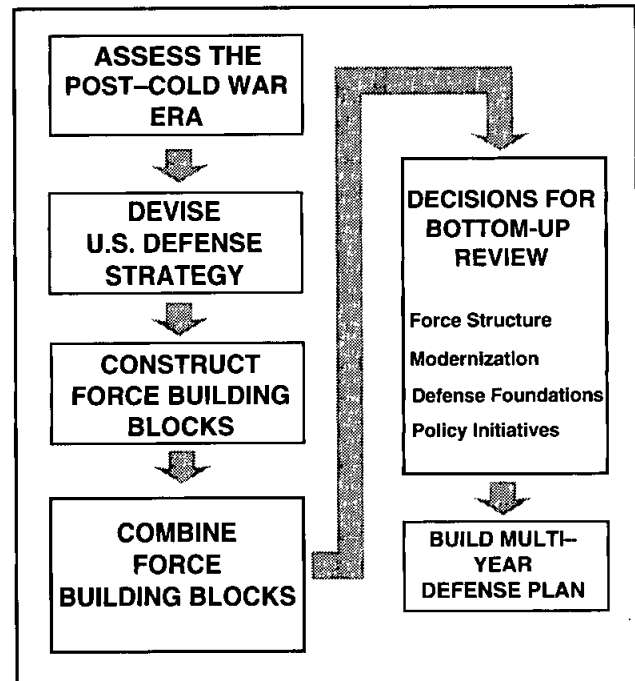


Figure 3

The Bottom-Up Review represented a close collaboration between the civilian and military sectors of the Department of Defense (DoD). Task forces were established — including representatives from the Office of the Secretary of Defense (OSD), the Joint Staff, the unified and specified commands, each of the armed services and, where appropriate, other defense agencies — to review the major issues entailed in planning defense strategy, forces, modernization programs, and other defense foundations. Numerous studies helped to formulate the key issues for decisionmakers and provided the analytical underpinning for the review.

SECTION II

A DEFENSE STRATEGY FOR THE NEW ERA

The requirement to thwart new dangers and seize new opportunities sets the objectives our forces should try to achieve. The discussion below describes in more detail the dangers and opportunities we now foresee and outlines a strategy for dealing with them.

Nuclear Dangers and Opportunities

Dangers posed by nuclear weapons and other weapons of mass destruction (WMD) — that is, biological and chemical weapons — are growing. Beyond the five declared nuclear-weapon states (the United States, Russia, France, Great Britain, and China), at least 20 other nations either have acquired or are attempting to acquire weapons of mass destruction. In most areas where U.S. forces could potentially be engaged on a large scale, such as Korea or the Persian Gulf, our likely adversaries already possess chemical and biological weapons. Moreover, many of these same states (e.g., North Korea, Iraq, and Iran) appear to be embarked upon determined efforts to acquire nuclear weapons.

Weapons of mass destruction in the hands of a hostile power not only threaten U.S. lives but also challenge our ability to use force to protect our interests. The acquisition of nuclear weapons by a regional aggressor would pose very serious challenges. For example, a hostile nuclear-armed state could threaten:

- Its neighbors, perhaps dissuading friendly states from seeking our help to resist aggression.
- Concentrations of U.S. forces deployed in the region.
- Regional airfields and ports critical to U.S. reinforcement operations.
- American cities — either with covertly delivered weapons or, eventually, ballistic or cruise missiles.

We also continue to face nuclear dangers from the former Soviet Union (FSU). Although our relations with Russia are friendly and cooperative, and although the chances of U.S.-Russian military confrontation have declined dramatically and we are cooperating with the Russians to safely reduce their nuclear arsenal, Moscow still controls tens of thousands of nuclear weapons — a factor to be reckoned with should anti-Western elements take control of the Russian government. Even after START II is ratified and implemented, Russia will maintain a formidable nuclear arsenal of 3,000 to 3,500 deliverable weapons.

Moreover, several thousand strategic nuclear weapons from the former Soviet arsenal lie outside Russia. Although the leaders of Ukraine, Kazakhstan, and Belarus have pledged to eliminate the strategic nuclear arsenals on their territories, the disposition of these weapons remains uncertain. While at present we assess that those weapons are secure, increasing political and social disorder in these newly independent states could heighten the risk that nuclear weapons might be used accidentally, in an unauthorized manner, or could fall into the hands of terrorist groups or nations. There is also a danger that the materials, equipment, and know-how needed to make nuclear weapons could leak through porous borders to other nations.

Beyond the promise of continued reductions in the nuclear stockpile of the former Soviet Union, as well as in our own, there are other opportunities for the international community to reduce the danger of nuclear weapons and other weapons of mass destruction. With international cooperation to strengthen and expand existing agreements, it should be possible to slow, if not halt, further proliferation; reduce the size and aggregate destructive power of nuclear, chemical, and biological arsenals; and deter or prevent the actual use of these weapons. This will involve diplomatic means such as strengthening the provisions of and widening participation in the Nuclear Nonproliferation Treaty,

implementing the Chemical Weapons Convention and the Missile Technology Control Regime, and negotiating nuclear testing limitations.

However, in addition to cooperative threat reduction and nonproliferation efforts, the United States will need to retain the capacity for nuclear retaliation against those who might contemplate the use of weapons of mass destruction. We must also continue to explore other ways to improve our ability to counter proliferation, such as active and passive defenses against nuclear, biological, and chemical weapons and their delivery systems.

Addressing Nuclear Dangers and Seizing Opportunities

Given this situation, our strategy for addressing the new dangers from nuclear weapons and other weapons of mass destruction and seizing opportunities to prevent their use must involve a multi-pronged approach.

First, it includes *nonproliferation* efforts to prevent the spread of weapons of mass destruction to additional countries through the strengthening of existing controls on the export of WMD technologies and materials and the improvement and expansion of international mechanisms and agreements for limiting and eliminating nuclear, biological, and chemical weapons.

Second, we must pursue *cooperative threat reduction* with the former Soviet Union, aimed at eliminating its stockpiles of nuclear, chemical, and biological weapons and preventing the spread of weapons of mass destruction, their components, and related technology and expertise within and beyond FSU borders.

While these first two efforts involve primarily diplomatic measures, DoD must also focus on *counterproliferation* efforts to deter, prevent, or defend against the use of WMD if our nonproliferation endeavors fail. Specifically, to address the new nuclear dangers, DoD must emphasize:

- Improvements in intelligence — both overall WMD threat assessments and timely intelligence and detection to support battlefield operations and management.
- Improvements in the ability of both our general purpose and special operations forces to seize, disable, or destroy arsenals of nuclear, biological, and chemical weapons and their delivery systems.
- Maintenance of flexible and robust nuclear and conventional forces to deter WMD attacks through the credible threat of devastating retaliation.
- Development of ballistic and cruise missile defenses, focused on the deployment of advanced theater missile defenses to protect forward-deployed U.S. forces and provision of the capability for a limited defense of the United States.
- Improved passive defenses, including better individual protective gear and better antidotes and vaccines for our forces in the event they are exposed to chemical or biological attacks.
- Other improved equipment, capabilities, and tactics to minimize the vulnerability of U.S. forces to WMD attacks.
- Better technologies to detect weapons transported covertly into the United States and elsewhere for terrorist purposes.

Regional Dangers and Opportunities

Regional dangers include a host of threats: large-scale aggression; smaller conflicts; internal strife caused by ethnic, tribal, or religious animosities; state-sponsored terrorism; subversion of friendly governments; insurgencies; and drug trafficking. Each of these dangers jeopardizes, to varying degrees, interests important to the United States.

Specific examples of these new regional dangers include:

- The continuing military preparations underway in North Korea, including the development of nuclear weapons and longer-range missiles — both of which are viewed with alarm by their neighbors and could spur massive rearmament throughout East Asia.
- The ambitions of Iraq or Iran to dominate Southwest Asia, which continue to threaten our friends and allies in the Persian Gulf region and could endanger global economic stability through limiting access to oil supplies.
- The continuing civil war in Croatia and Bosnia, with its terrible human suffering and potential spillover into the remainder of the former Yugoslavia and other neighboring states.
- The struggles in central and eastern Europe as many states seek to consolidate democracy and build market economies, which, if this difficult transition fails, could produce internal instability and regional conflict.
- State-sponsored terrorism which increasingly brings its violence within U.S. borders.
- Drug trafficking in Latin America and elsewhere which endangers the lives, health, and livelihoods of Americans.

Beyond these dangers, there are also real opportunities. During the Cold War, repressive regimes that were direct adversaries of the United States dominated vast regions of the globe. Today, the countries that pose direct dangers to us are far fewer, and the countries that may join us in thwarting the remaining regional dangers are far more numerous.

Addressing Regional Dangers and Seizing Opportunities

To address the new regional dangers and seize new opportunities, we have developed a multifaceted strategy based on defeating aggressors in major regional conflicts, maintaining overseas presence to deter conflicts and provide regional stability, and conducting smaller-scale intervention operations, such as peace enforcement, peacekeeping, humanitarian assistance, and disaster relief to further U.S. interests and objectives.

Major Regional Conflicts. The United States will continue to have important interests and allies in many regions of the world, from Europe through Southwest Asia, into East Asia, and elsewhere. Regional aggressors represent a danger that must be deterred and, if necessary, defeated by the military capability of the United States and its allies. Moreover, if we were to be drawn into a war in response to the armed aggression of one hostile nation, another could well be tempted to attack its neighbors — especially if it were convinced the United States and its allies did not possess the requisite military capability or will to oppose it.

Therefore, it is prudent for the United States to maintain sufficient military power to be able to win two major regional conflicts that occur nearly simultaneously. With this capability, we will be confident, and our allies as well as potential enemies will know, that a single regional conflict will not leave our interests and allies in other regions at risk.

Further, sizing our forces for two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat, and then turn out, through doctrinal or technological innovation, to be more capable than we expect, or enlist the assistance of other

nations to form a coalition against our interests. The dynamic and unpredictable post-Cold War environment demands that we maintain military capabilities flexible and responsive enough to cope with unforeseen dangers. Thus, U.S. forces will be structured to achieve decisive victory in two nearly simultaneous major regional conflicts and to conduct combat operations characterized by rapid response and a high probability of success, while minimizing the risk of significant American casualties.

Overseas Presence. Stationing and deploying U.S. military forces overseas in peacetime is an essential element in dealing with new regional dangers and pursuing new opportunities.

The peacetime overseas presence of our forces is the single most visible demonstration of our commitment to defend U.S. and allied interests in Europe, Asia, and elsewhere around the world. The presence of U.S. forces deters adventurism and coercion by potentially hostile states, reassures friends, enhances regional stability, and underwrites our larger strategy of international engagement, prevention, and partnership. It also gives us a stronger influence, both political and economic as well as military, in the affairs of key regions.

By stationing forces abroad we also improve our ability to respond effectively to crises or aggression when they occur. Our overseas presence provides the leading edge of the rapid response capability that we would need in a crisis. Moreover, our day-to-day operations with allies improve the ability of U.S. and allied forces to operate effectively together.

Finally, our routine presence helps to ensure our access to the facilities and bases we would need during a conflict or contingency, both to operate in a given region and to deploy forces from the United States to distant regions.

Our overseas presence forces take several forms:

- Permanent or long-term overseas stationing of U.S. ground, air, and maritime forces.

- Periodic and temporary deployments of forces in response to crises or to enhance deterrence through joint training with allied and friendly forces.

- Prepositioning of military equipment and supplies to facilitate a rapid American military response should a crisis occur.

Army and Air Force units are permanently stationed in regions where the United States has important and enduring interests and wants to make clear that aggression will be met by a U.S. military response. Because these units are also part of the forces needed to fight and win two major regional conflicts, we must retain a significant presence in key regions. However, with the demise of the global Soviet threat, we can protect our interests and prepare for potential regional conflicts at significantly reduced levels of forward-deployed forces.

Maritime overseas presence forces range widely across the world's oceans, demonstrating to both friends and potential adversaries that the United States has global interests and the ability to bring military power quickly to bear anywhere in the world. In addition, maritime forces have the operational mobility and political flexibility to reposition to potential trouble spots by unilateral U.S. decision — whether to signal America's interest in resolving a crisis, evacuate American citizens from danger, render humanitarian assistance, or conduct strikes against countries supporting terrorism or defying U.N. resolutions.

Peacekeeping, Peace Enforcement, and Other Intervention Operations. While deterring and defeating major regional aggression will be the most demanding requirement of the new defense strategy, our emphasis on engagement, prevention, and partnership means that, in this new era, U.S. military forces are more likely to be involved in operations short of declared or intense warfare. Events of the past few years have already borne this out, as our armed forces have been involved in a wide range of so-called "intervention" operations, from aiding typhoon victims in Bangladesh during Operation Sea Angel, to delivering

humanitarian relief to the former Soviet Union under Operation Provide Hope, to conducting the emergency evacuation of U.S. citizens from Liberia during Operation Sharp Edge, to restoring order and aiding the victims of the civil war in Somalia during Operation Restore Hope.

Through overseas presence and power projection, our armed forces can help deter or contain violence in volatile regions where our interests are threatened. In some circumstances, U.S. forces can serve a peacekeeping role, monitoring and facilitating the implementation of cease-fire and peace agreements with the consent of the belligerent parties as part of a U.N. or other coalition presence. In more hostile situations, the United States might be called upon, along with other nations, to provide forces to compel compliance with international resolutions or to restore order in peace enforcement operations. In some cases, such as Operation Just Cause in Panama, we may intervene unilaterally to protect our interests. Finally, our armed forces will continue to play an important role in the national effort to halt the importation of illegal drugs to the United States.

In the future, there are likely to be many occasions when we are asked to intervene with military force overseas. In deciding where, when, and how our military should be employed for peace enforcement, peacekeeping, humanitarian relief, or similar types of operations, we will need to consider each situation individually and carefully weigh several factors:

- Does participation advance U.S. national interests?
- Are the objectives clear and attainable?
- How will the intervention affect our other defense obligations?
- Can the United States contribute capabilities and assets necessary for the success of the mission?

Because these operations are so diverse, the forces and capabilities needed to conduct them will vary.

Fortunately, the military capabilities needed for these operations are largely those maintained for other purposes — major regional conflicts and overseas presence. Thus, although specialized training and equipment may often be needed, the forces required will, for the most part, be selected elements of those general purpose forces maintained for other, larger military operations. There are some forces and capabilities that are particularly well suited for intervention operations — for example, special operations forces, including psychological operations and civil affairs units.

New Dangers to Democracy and Opportunities for Democratic Reform

The post-Cold War trend toward democracy throughout much of the world is a tremendously favorable one for the security of the United States. Our values are ascendant. Peaceful resolution of disputes is more likely as democracy spreads.

This positive trend, however, is reversible. In most former communist countries, democratic institutions are not yet firmly established, and market reforms have yet to produce tangible improvements in standards of living. The reversal of reforms and the emergence of ultranationalist authoritarianism, particularly in Russia, would substantially alter the security situation for the United States.

Addressing Dangers to Democracy

U.S. strategy will seek to draw democratizing states in central and eastern Europe, Russia, Ukraine, and other former Soviet republics into deeper partnership. We and our allies should:

- Offer carefully targeted economic aid, training assistance, and education and information programs to help underwrite democratization and market reforms.
- Continue and intensify our program of defense-to-defense contacts to foster mutual understanding and help these countries institute democratic, civilian control over the military.

- Provide assistance to secure and reduce the Russian nuclear arsenal and eliminate strategic nuclear armaments in the non-Russian republics.
- Solicit cooperation in regional security initiatives, such as multilateral peacekeeping operations.

Collectively, such measures constitute “defense by other means” against the potential consequences of failure of reform in Russia and elsewhere. We also need to work with the military in other countries to sustain democracy.

As a hedge against possible reversals, we should strengthen our bilateral and multilateral ties in central and eastern Europe. We must also retain the means to rebuild a larger force structure, should one be needed in the future to confront an emergent authoritarian and imperialistic Russia reasserting its full military potential.

New Economic Dangers and Opportunities

The final — and in the post-Cold War period, perhaps most important — set of dangers that U.S. strategy must confront is economic. In recent years, the U.S. economy has been plagued by an enormous and growing federal debt, sluggish growth, inadequate job creation, and a large trade imbalance. Further, our growing dependence on imported petroleum constitutes an economic danger of its own.

The Department of Defense can help address these economic dangers. DoD can help America seize the opportunity presented by the end of the Cold War to enhance its economic security. We must stress the productive reinvestment of defense resources, facilities, and technology into the civilian economy. Placing new emphasis on key technologies — information and manufacturing technologies and advanced materials — will help strengthen both the military and civilian sectors. With careful restructuring of our forces and support infrastructure, we can maintain capabilities

sufficient to meet our present and future security needs while reducing the overall level of resources devoted to defense.

Beyond simply using fewer resources, the Department of Defense will actively assist in the transition of the U.S. economy away from a Cold War footing. Such assistance will come in the form of providing transition assistance to individuals departing the military, facilitating the conversion of defense industries, and encouraging the freer flow of technologies between the civilian and military sectors.

Sustaining a healthy free trade regime and, within that, expanding U.S. exports and reducing trade imbalances will be key to our future economic growth. Addressing these issues productively will hinge on maintaining sound political and economic relationships with our trading partners. Trade relations are intertwined with security relations: In most cases, we enjoy close security relationships with our trading partners. Our bilateral and multilateral security arrangements are tangible evidence of our interest in regions, and they help ensure that the United States will have a “seat at the table” in forums for political and economic decisionmaking.

Military power supports and is supported by political and economic power. Likewise, security relationships support and are supported by trade relationships. We cannot expect to improve our trade relations or our trading position with our allies if we withdraw from our security relationships. At the same time, we must recognize that domestic support for overseas commitments depends in part on the perception of fairness in trade and other matters.

Objectives of Our Armed Forces

Our examination of new dangers and opportunities leads to the following major objectives for our armed forces.

To meet the new *nuclear danger* and seize the opportunities in this area, our objectives are to:

- Deter the use of nuclear, biological, or chemical weapons against the United States, its forces, and its allies.
- Halt or at least slow the proliferation of nuclear, biological, and chemical weapons.
- Develop capabilities to locate and destroy WMD storage, production, and deployment facilities of potential aggressors and defend our forward-deployed forces from such weapons.
- Continue to reduce the nuclear arsenals of the former Soviet Union and the United States and so reduce the threat of nuclear war.
- Minimize the exposure and the vulnerability of U.S. forces to nuclear, biological, or chemical weapons use.

To meet new *regional dangers* and seize the opportunities that exist to reduce these dangers, our objectives are to:

- Deter and, if necessary, defeat major aggression in regions important to the United States.
- Be capable of fighting and winning two major regional conflicts nearly simultaneously.
- Prepare U.S. forces to participate effectively in multilateral peace enforcement and unilateral intervention operations.
- Continue to adapt existing alliances and build new ones to enhance regional and global security.

To meet the *dangers to democratic reform* and seize the opportunity for a further spread of democracy, our objectives are to:

- Use military-to-military contacts to help foster democratic values in other countries.
- Protect fledgling democracies from subversion and external threats.

To meet the *dangers to American economic prosperity* and seize the opportunity to accelerate U.S. economic growth and promote global economic well-being, our objectives are to:

- Redirect resources to investments that improve both our defense posture and our competitive position economically.
- Facilitate reinvestment that allows defense industries to shift to nondefense production.
- Support the development of dual-use technologies and encourage the freer flow of technology between the military and civilian sectors.
- Use our long-standing security relationships with key allies and partners to build a bridge to greater economic cooperation and to sustain and enhance global free trade.
- Actively assist nations in making the transition from controlled to market economies.

Building Future Capabilities: Guiding Principles

While the objectives outlined above provide a framework for determining our force structure and modernization requirements, certain other underlying principles guided our effort during the Bottom-Up Review. In his inaugural address, President Clinton pledged to keep America's military the best-trained, best-equipped, best-prepared fighting force in the world. To fulfill that pledge, we must keep it the focus of our effort throughout the planning, programming, and budgeting process.

First, we must *keep our forces ready to fight*. We have already witnessed the challenges posed by the new dangers in operations like Just Cause (Panama), Desert Storm (Iraq), and Restore Hope (Somalia). Each of these were "come as you are" campaigns with little time to prepare our forces for the challenges they met.

The new dangers thus demand that we keep our forces ready to fight as a top priority in allocating scarce defense resources. We must adequately fund operations and maintenance accounts, maintain sufficient stocks of spare parts, keep our forces well-trained and equipped, and take the other steps essential to preserving readiness.

A key element of maintaining forces ready to fight is to *maintain the quality of our people*, so that they remain the best fighting force in the world. First, this means keeping our personnel highly motivated by treating them fairly and maintaining their quality of life. It also means continuing to recruit talented young

men and women, expanding career opportunities for all service members, and putting in place programs to ease the transition to civilian life for departing military personnel as we bring down the size of our forces.

We must also *maintain the technological superiority* of our weapons and equipment. Operation Desert Storm demonstrated that we produce the best weapons and military equipment in the world. This technological edge helps us to achieve victory more swiftly and with fewer casualties. We must design a balanced modernization program that safeguards this edge and the necessary supporting industrial base without buying more weapons than we need or can afford.

SECTION III

FORCES TO IMPLEMENT THE DEFENSE STRATEGY

We describe the forces and capabilities needed to implement our defense strategy and guide the construction of our overall force structure as “building blocks.” Force building blocks are a valuable analytical tool that allow us to see the linkage between certain types and quantities of forces and the tasks they are meant to perform. They also make clearer the price to be paid in making cuts in the military structure: eliminating a force building block can mean eliminating the capability to conduct a particular task.

Four broad classes of potential military operations were used in the Bottom-Up Review to evaluate the adequacy of future force structure alternatives:

- Major regional conflicts (MRCs).
- Smaller-scale conflicts or crises that would require U.S. forces to conduct peace enforcement or intervention operations.
- Overseas presence — the need for U.S. military forces to conduct normal peacetime operations in critical regions.
- Deterrence of attacks with weapons of mass destruction, either against U.S. territory, U.S. forces, or the territory and forces of U.S. allies.

This list is not all-inclusive. We will provide forces and military support for other types of operations, such as peacekeeping, humanitarian assistance, and to counter international drug trafficking. However, while such operations often call for small numbers of specialized forces or assets, they are not likely to be major determinants of general purpose force structure. However, they could require specialized training and equipment.

Our analysis of each of these four types of operations allowed us to construct, for planning purposes, building blocks of the forces required for them. By combining the building blocks and adjusting them to

account for judgments about the need to conduct simultaneous operations, we were able to determine the number and mix of active and reserve forces that we will need to carry out our defense strategy.

Major Regional Conflicts

During the Cold War, U.S. military planning was dominated by the need to confront numerically superior Soviet forces in Europe, the Far East, and Southwest Asia. Now, the focus is on the need to project power into regions important to U.S. interests and to defeat potentially hostile regional powers, such as North Korea or Iraq. Although these nations are unlikely to threaten the United States directly, they and other countries like them have shown that they are willing and able to field forces sufficient to threaten important U.S. interests, friends, and allies. Operation Desert Storm was a powerful demonstration of the need to counter such regional aggression.

Potential regional aggressors are expected to be capable of fielding military forces in the following ranges:

- 400,000 – 750,000 total personnel under arms
- 2,000 – 4,000 tanks
- 3,000 – 5,000 armored fighting vehicles
- 2,000 – 3,000 artillery pieces
- 500 – 1,000 combat aircraft
- 100 – 200 naval vessels, primarily patrol craft armed with surface-to-surface missiles, and up to 50 submarines
- 100 – 1,000 Scud-class ballistic missiles, some possibly with nuclear, chemical, or biological warheads.

Military forces of this size could threaten regions important to the United States if allied or friendly states were unable to match their power. Hence, we must prepare our forces to assist those of friends and allies in deterring, and ultimately defeating, aggression should it occur.

Scenarios as Planning Tools. Every war that the United States has fought has been different from the last, and different from what defense planners had envisioned. For example, the majority of the bases and facilities used by the United States and its coalition partners in Operation Desert Storm were built in the 1980s, when we envisioned a Soviet invasion through Iran to be the principal threat to the Gulf region. In planning forces capable of fighting and winning major regional conflicts, we must avoid preparing for past wars. History suggests that we most often deter the conflicts that we plan for and actually fight the ones we do not anticipate.

For planning and assessment purposes, we have selected two illustrative scenarios that are both plausible and posit demands characteristic of those that could be posed by conflicts with other potential adversaries. Figure 4 displays the scenarios and their relationship to planning for force employment across a range of potential conflicts. While a number of scenarios were examined, the two that we focused on most closely in the Bottom-Up Review envisioned aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea.

Scenarios as Planning Tools

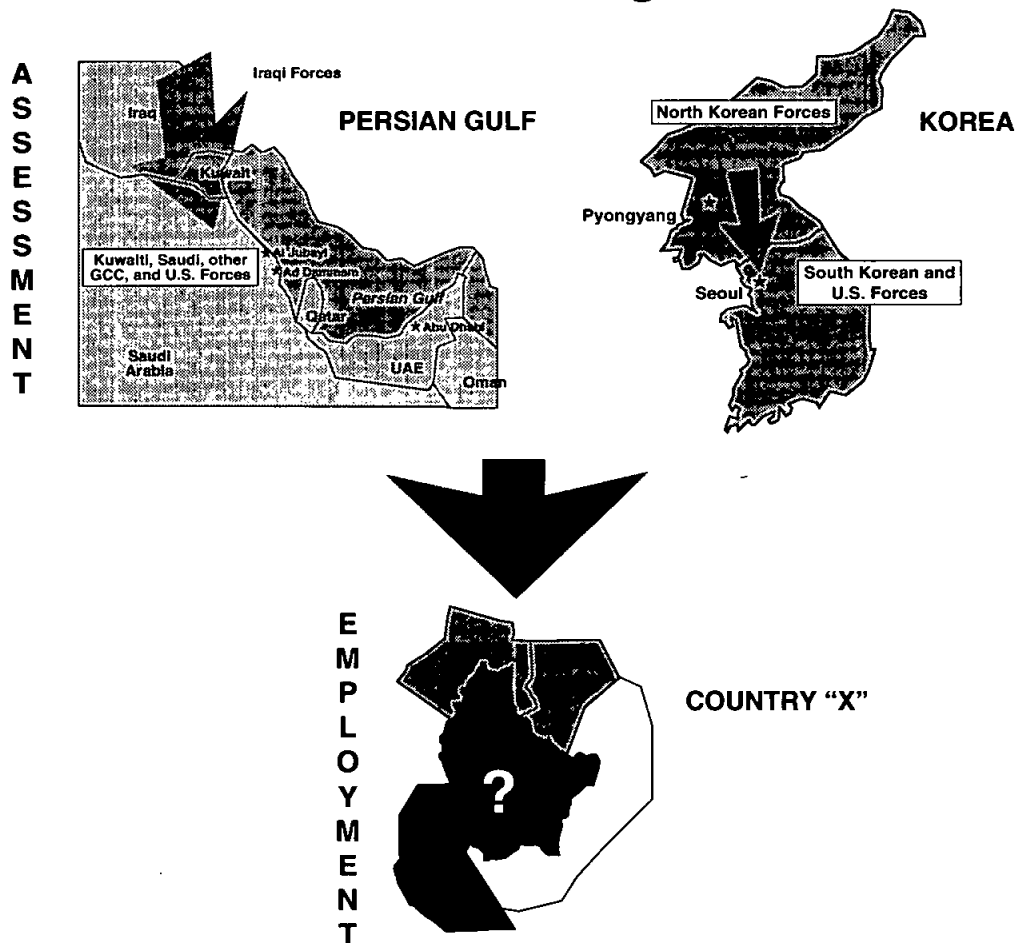


Figure 4

Neither of these scenarios should be regarded as a prediction of future conflicts, but each provides a useful representation of the challenge that could be presented by a well-armed regional power initiating aggression thousands of miles from the United States. As such, the scenarios serve as yardsticks against which to assess, in gross terms, the capabilities of U.S. forces.

In each scenario, we examined the performance of projected U.S. forces in relation to critical parameters, including warning time, the threat, terrain, weather, duration of hostilities, and combat intensity. Overall, these scenarios were representative of likely ranges of these parameters.

Both scenarios were developed for analyses conducted by the Joint Staff. Each assumed a similar enemy operation: an armor-heavy, combined-arms offensive against the outnumbered forces of a neighboring state. U.S. forces, most of which were not presumed to be present in the region when hostilities commenced, had to deploy to the region quickly, supplement indigenous forces, halt the invasion, and defeat the aggressor.

Such a "short notice" scenario, in which only a modest number of U.S. forces are in a region at the outset of hostilities, is both highly stressing and plausible. History shows that we frequently fail to anticipate the location and timing of aggression, even large-scale attacks against our interests. In such cases, it may also not be possible, prior to an attack, to reach a political consensus on the proper U.S. response or to convince our allies to grant U.S. forces access to facilities in their countries.

We also expect that the United States will often be fighting as the leader of a coalition, with allies providing some support and combat forces. As was the case in Desert Storm, the need to defend common interests should prompt our allies in many cases to contribute capable forces to a war effort. However, our forces must be sized and structured to preserve the flexibility and the capability to act unilaterally, should we choose to do so.

The Four Phases of U.S. Combat Operations

Our first priority in preparing for regional conflicts is to prevent them from ever occurring. This is the purpose of our overseas presence forces and operations, joint exercises, and other military capabilities — to deter potential regional aggressors from even contemplating an attack. Should deterrence fail and conflict occur, it is envisioned that combat operations would unfold in four main phases.

Phase 1: Halt the invasion. The highest priority in defending against a large-scale attack will most often be to minimize the territory and critical facilities that an invader can capture. Should important strategic assets fall, the invader might attempt to use them as bargaining chips. In addition, stopping an invasion quickly may be key to ensuring that a threatened ally can continue its crucial role in the collective effort to defeat the aggressor. Further, the more territory the enemy captures, the greater the price to take it back: The number of forces required for a counteroffensive to repel an invasion can increase, with correspondingly greater casualties, depending on the progress the enemy makes. In the event of a short-warning attack, more U.S. forces would need to deploy rapidly to the theater and enter the battle as quickly as possible.

Phase 2: Build up U.S. combat power in the theater while reducing the enemy's. Once an enemy attack had been stopped and the front stabilized, U.S. and allied efforts would focus on continuing to build up combat forces and logistics support in the theater while reducing the enemy's capacity to fight. Land, air, maritime, and special operations forces from the United States and coalition countries would continue to arrive. These forces would seek to ensure that the enemy did not regain the initiative on the ground, and they would mount sustained attacks to reduce the enemy's military capabilities in preparation for a combined-arms counteroffensive.

Phase 3: Decisively defeat the enemy. In the third phase, U.S. and allied forces would seek to mount

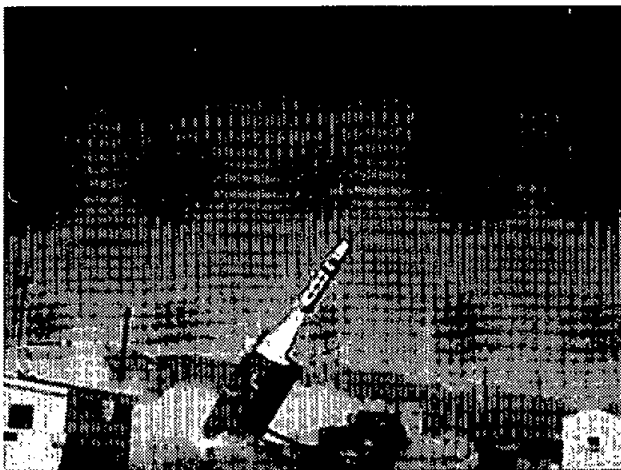
a large-scale, air-land counteroffensive to defeat the enemy decisively by attacking his centers of gravity, retaking territory he had occupied, destroying his war-making capabilities, and successfully achieving other operational or strategic objectives.

Phase 4: Provide for post-war stability. Although a majority of U.S. and coalition forces would begin returning to their home bases, some forces might be called upon to remain in the theater after the enemy had been defeated to ensure that the conditions that resulted in conflict did not recur. These forces could help repatriate prisoners, occupy and administer some or all of the enemy's territory, or ensure compliance with the provisions of war-termination or cease-fire agreements.

Forces for Combat Operations

Described below are the types of forces that are needed to conduct joint combat operations in all four phases of an MRC.

Forces for Phase 1. Primary responsibility for the initial defense of their territory rests, of course, with our allies. As forces of a besieged country move to blunt an attack, U.S. forces already in the theater would move rapidly to provide assistance. However, as already mentioned, we are drawing down our overseas



An ATACMS launch.

presence in response to the end of the Cold War. Thus, the bulk of our forces, even during the early stages of a conflict, would have to come from the United States. This places a premium on rapidly deployable yet highly lethal forces to blunt an attack.

The major tasks to be performed in this phase and beyond are:

- Help allied forces establish a viable defense that halts enemy ground forces before they can achieve critical objectives.
- Delay, disrupt, and destroy enemy ground forces and damage the roads along which they are moving, in order to halt the attack. U.S. attacks would be mounted by a combination of land- and sea-based strike aircraft and heavy bombers using precision-guided munitions; long-range tactical missiles; ground maneuver forces with antiarmor capabilities; and special operations forces.
- Protect friendly forces and rear-area assets from attack by aircraft or cruise and ballistic missiles, using land- and sea-based aircraft, ground- and sea-based surface-to-air missiles, and special operations forces.
- Establish air superiority and suppress enemy air defenses as needed, including those in rear areas and those accompanying invading ground forces, using land- and sea-based strike and jamming aircraft as well as surface-to-surface missiles, such as the Army Tactical Missile System (ATACMS).
- Destroy high-value targets, such as weapons of mass destruction, and degrade the enemy's ability to prosecute military operations through attacks focused on his central command, control, and communications facilities. For such attacks, we would rely heavily on long-range bombers and land- and sea-based strike aircraft using precision-guided munitions, and on cruise missiles. Special operations forces would also play an important role in such attacks.

- Establish maritime superiority, using naval task forces with mine countermeasure ships, in order to ensure access to ports and sea lines of communication, and as a precondition for amphibious assaults.

Forces for Phase 2. Many of the same forces employed in Phase 1 would be used in the second phase to perform similar tasks — grinding down the enemy's military potential while additional U.S. and other coalition combat power was brought into the region. As more land- and sea-based air forces arrived, emphasis would shift from halting the invasion to isolating enemy ground forces and destroying them, destroying enemy air and naval forces, destroying stocks of supplies, and broadening attacks on military-related targets in the enemy's rear area. These attacks could be supplemented with direct and indirect missile and artillery fire from ground, air, and naval forces.

Meanwhile, other U.S. forces, including heavy ground forces, would begin arriving in the theater to help maintain the defensive line established at the end of Phase 1 and to begin preparations for the counteroffensive.

Forces for Phase 3. The centerpiece of Phase 3 would be the U.S. and allied counteroffensive, aimed at engaging, enveloping, and destroying or capturing enemy ground forces occupying friendly territory. Major tasks within the counteroffensive include:

- Breaching tactical and protective minefields.
- Maneuvering to envelop or flank and destroy enemy forces, including armored vehicles in dug-in positions.
- Conducting or threatening an amphibious invasion.
- Applying air power using precision-guided munitions in support of ground forces and for deep interdiction attacks.

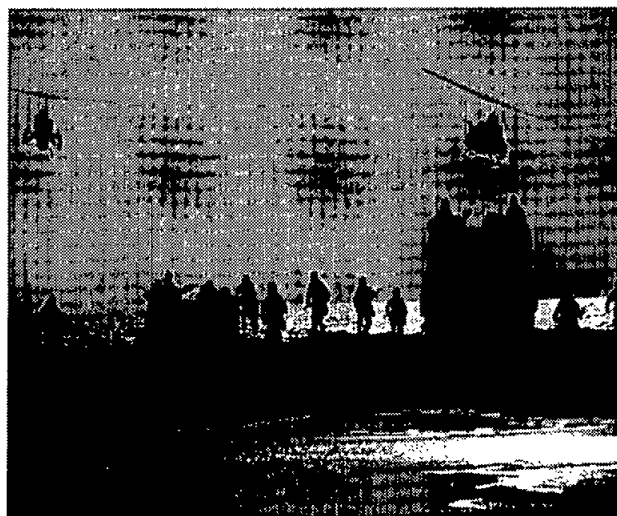
- Dislodging and defeating infantry fighting from dug-in positions, and defeating light infantry on urban terrain.
- Destroying enemy artillery.
- Locating and destroying mobile enemy reserves.

Combat power in this phase would include highly mobile armored, mechanized, and air assault forces, supported by the full complement of air power, special operations forces, and land- and sea-based fire support. Amphibious forces would provide additional operational flexibility to the theater commander.

Forces for Phase 4. Finally, a smaller complement of joint forces would remain in the theater once the enemy had been defeated. These forces might include a carrier battle group, one to two wings of fighters, a division or less of ground forces, and special operations units.

Supporting Capabilities

The foregoing list of forces for the various phases of a major regional conflict included only combat force elements. Several types of support capabilities would play essential roles in all phases.



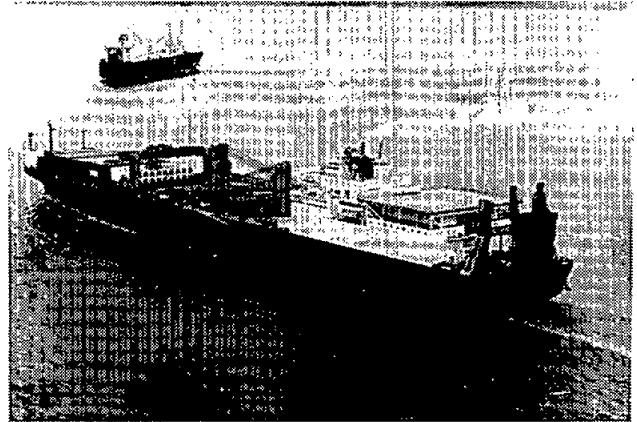
U.S. Marines conducting amphibious assault exercise.

Airlift. Adequate airlift capacity is needed to bring in forces and material required for the first weeks of an operation. In Operations Desert Shield/Desert Storm, the United States airlifted to the Gulf region, on average, more than 2,400 tons of material per day. We anticipate that at least the same level of lift capacity would be needed to support high-intensity military operations in the opening phase of a future MRC and to help sustain operations thereafter.

Prepositioning. Prepositioning heavy combat equipment and supplies, both ashore and afloat, can greatly reduce both the time required to deploy forces to distant regions and the number of airlift sorties devoted to moving such supplies. Initiatives now underway will accelerate the arrival of heavy Army forces overseas in response to crises.

Sealift. In any major regional conflict, most combat equipment and supplies would be transported by sea. While airlift and prepositioning provide the most rapid response for deterrence and initial defense, the deployment of significant heavy ground and air forces, their support equipment, and sustainment must come by sea.

Battlefield Surveillance; Command, Control, and Communications. Accurate information on the location and disposition of enemy forces is a prerequisite for effective military operations. Hence, our planning envisions the early deployment of reconnaissance and command and control aircraft and ground-based assets to enable our forces to see the enemy and to pass information quickly through all echelons of our forces. Total U.S. intelligence and surveillance capability will be less than it was during the Cold War, but it will be better able to provide timely information to battlefield commanders. Advanced systems — such as the Joint Surveillance and Target Attack Radar System (JSTARS), the upgraded Airborne Warning and Control System (AWACS), and the Milstar satellite communications system — will ensure that U.S. forces have a decisive advantage in tactical intelligence and communications.



Maritime prepositioning ships.

Advanced Munitions. As coalition operations in the Gulf War demonstrated, advanced precision-guided munitions can dramatically increase the effectiveness of a fighting force. Precision-guided munitions already in the U.S. inventory (for example, laser-guided bombs) as well as new types of munitions still under development are needed to ensure that U.S. forces can operate successfully in future MRCs and other types of conflicts. New “smart” and “brilliant” munitions under development hold promise of dramatically improving the ability of U.S. air, ground, and maritime forces to destroy enemy armored vehicles and halt invading ground forces, as well as destroy fixed targets at longer ranges, thus reducing exposure to enemy air defenses.

Aerial Refueling. Large numbers of aerial-refueling aircraft would be needed to support many components of a U.S. theater campaign. Fighter aircraft deploying over long distances require in-flight refueling. Airlifters can carry more cargo longer distances if aerial refueling is available en route. Aerial surveillance and control platforms, such as AWACS and JSTARS, also need airborne refueling in order to achieve maximum mission effectiveness.

The MRC Building Block

In planning our future force structure and allocating resources, we established force levels and support objectives that should enable us to win one MRC

across a range of likely conflicts. Our detailed analyses of possible future MRCs, coupled with military judgment as to the outcomes, suggest that the following forces will be adequate to execute the strategy outlined above for a single MRC:

- 4 – 5 Army divisions
- 4 – 5 Marine Expeditionary Brigades
- 10 Air Force fighter wings
- 100 Air Force heavy bombers
- 4 – 5 Navy aircraft carrier battle groups
- Special operations forces

These forces constitute a prudent building block for force planning purposes. In the event of a conflict, our response would depend on the nature and scale of the aggression and on circumstances elsewhere in the world. If the initial defense failed to halt the invasion quickly, or if circumstances in other parts of the world permitted, U.S. decisionmakers might choose to commit more forces than those listed (for example, two additional Army divisions). These added forces would help either to achieve the needed advantage over the enemy, to mount a decisive counteroffensive, or to accomplish more ambitious war objectives, such as the complete destruction of the enemy's war-making potential. But our analysis also led us to the conclusion that enhancements to our military forces, focused on ensuring our ability to conduct a successful initial defense, would both reduce our overall ground force requirements and increase the responsiveness and effectiveness of our power projection forces.

Fighting Two MRCs

In this context, we decided early in the Bottom-Up Review that the United States must field forces sufficient to fight and win two major regional conflicts that occur nearly simultaneously. This is prudent for two reasons.

First, we need to avoid a situation in which the United States in effect makes simultaneous wars more likely by leaving an opening for potential aggressors to attack their neighbors, should our engagement in a war

in one region leave little or no force available to respond effectively to defend our interests in another.

Second, fielding forces sufficient to win two wars nearly simultaneously provides a hedge against the possibility that a future adversary — or coalition of adversaries — might one day confront us with a larger-than-expected threat. In short, it is difficult to predict precisely what threats we will confront ten to twenty years from now. In this dynamic and unpredictable post-Cold War world, we must maintain military capabilities that are flexible and sufficient to cope with unforeseen threats.

For the bulk of our ground, naval, and air forces, fielding forces sufficient to provide this capability involves duplicating the MRC building block described above. However, in planning our overall force structure, we must recognize two other factors. First, we must have sufficient strategic lift to deploy forces when and where they are needed. Second, certain specialized high-leverage units or unique assets might be “dual tasked,” that is, used in both MRCs. For example, certain advanced aircraft — such as B-2s, F-117s, JSTARS, and EF-111s — that we have purchased in limited numbers because of their expense would probably need to shift from the first to second MRC.

Force Enhancements to Support Our Strategy

As previously mentioned, we have already undertaken or are planning a series of enhancements to our forces to improve their capability, flexibility, and lethality. These improvements are geared especially toward buttressing our ability to conduct a successful initial defense in any major regional conflict.

As shown in Figure 5, the enhancements include improving: (1) strategic mobility, through more prepositioning and enhancements to airlift and sealift; (2) the strike capabilities of aircraft carriers; (3) the lethality of Army firepower; and (4) the ability of long-range bombers to deliver conventional smart munitions.

Strategic Mobility. Our plans call for substantial enhancements to our strategic mobility — most of which were first identified in the 1991 Mobility Requirements Study (MRS).

First, we will either continue the program to purchase and deploy the C-17 airlifter or purchase other airlifters to replace our aging C-141 transport aircraft.

Development of the C-17 has been troubled from the start and we will continue to monitor the program's progress closely, but significant, modern, flexible air-lift capacity is essential to our defense strategy. A decision on the C-17 will be made after a thorough review by the Defense Acquisition Board is completed in the fall of 1993.

Force Enhancements to Halt a Short-Warning Attack

		Today's Force	Future Force
Persian Gulf Region	Prepo	1 Battalion Training Set 1 Maritime Prepositioning Ship (MPS) Squadron 7 Prepositioning Ships	2 Brigade Sets ashore 1 Brigade Set afloat* 1 MPS Squadron 7 Prepositioning Ships
	Forces	1 Carrier Battle Group (Tether)	1 Carrier Battle Group (Tether)
PHASE I Halt Invasion		FAIR - Lack of heavy forces to help stop invader - Insufficient prepositioning - Limited antiarmor capability - Limited anti-tactical ballistic missile (ATBM) capability	GOOD - 3 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Improved antiarmor precision-guided munitions - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces
KOREA	Prepo	1 Brigade-Sized Marine Expeditionary Force (MEF) 1 MPS Squadron	1 Brigade Set ashore 1 Brigade Set afloat* 2 Brigade-Sized MEFs (2 MPS Squadrons)
	Forces	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF	1 Division (2 Brigades) 2.4 Fighter Wings 1 Carrier Battle Group 1 MEF
PHASE I Halt Invasion		GOOD - Substantial in-place forces - Established command, control, communications, and intelligence (C3I) network - Rapid reinforcement from Japan, Okinawa - Limited ATBM capability	GOOD - 2 heavy brigade sets of prepositioned equipment - Increased early-arriving land-based and carrier aircraft and long-range bombers - Improved antiarmor precision-guided munitions - Improved ATBM capability
	PHASE II Build Up Forces in Theater for Counteroffensive	FAIR - Slow closure due to modest sealift capability	GOOD - Airlift and sealift upgrades support rapid closure of heavy forces

* Brigade set would be positioned to "swing" to either region.

Figure 5

Second, we plan to store a brigade set of heavy Army equipment afloat; the ships carrying this material would be positioned in areas from which they could be sent on short notice either to the Persian Gulf or to Northeast Asia. Other prepositioning initiatives would accelerate the arrival of heavy Army units in Southwest Asia and Korea.

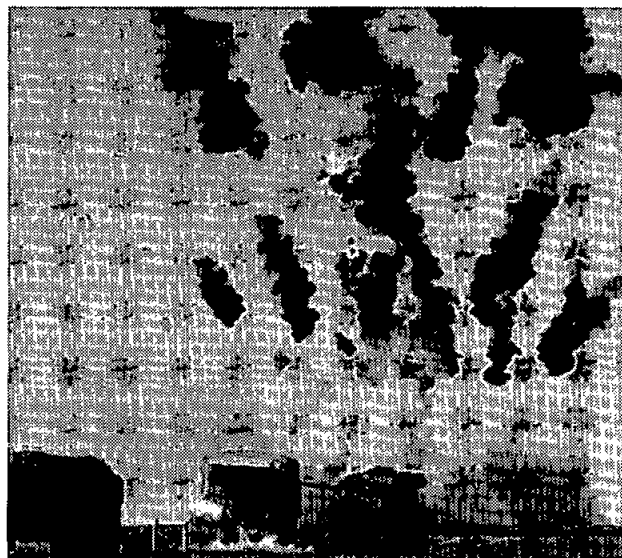
Third, we will increase the capacity of our surge sealift fleet to transport forces and equipment rapidly from the United States to distant regions by purchasing additional roll-on/roll-off ships.

Fourth, we will improve the readiness and responsiveness of the Ready Reserve Force (RRF) through a variety of enhancements. Finally, we will fund various efforts to improve the "fort-to-port" flow of personnel, equipment, and supplies in the United States.

Naval Strike Aircraft. The Navy is examining a number of innovative ways to improve the firepower aboard its aircraft carriers. First, the Navy will improve its strike potential by providing a precision ground-attack capability to many of its F-14 aircraft. It also will acquire stocks of new "brilliant" antiarmor weapons for delivery by attack aircraft. Finally, the Navy plans to develop the capability to fly additional squadrons of F/A-18s to forward-deployed aircraft carriers that would be the first to arrive in response to a regional contingency. These additional aircraft would increase the striking power of the carriers during the critical early stages of a conflict.

Army Firepower. The Army is developing new, smart submunitions that can be delivered by ATACMS, the Multiple-Launch Rocket System (MLRS), the Tri-Service Standoff Attack Missile (TSSAM) now under development, and by standard tube artillery. In addition, the Longbow fire control radar system will increase the effectiveness and survivability of the AH-64 Apache attack helicopter. We also are examining more prepositioning of ATACMS and MLRS and having Apaches self-deploy from their overseas bases so that all would be available in the early stages of a conflict.

Air Force Long-Range Bombers and Munitions. Air Force enhancements will be in two areas — bombers and munitions. First, we plan to modify the Air Force's B-1 and B-2 long-range heavy bombers to improve their ability to deliver "smart" conventional munitions against attacking enemy forces and fixed targets. Second, we will develop all-weather munitions. For example, the Air Force is developing a guidance package for a tactical munitions dispenser filled with antiarmor submunitions that could be used in all types of weather. These programs will dramatically increase our capacity to attack and destroy critical targets in the crucial opening days of a short-warning conflict.



Delivery of "smart" sensor-fused weapons on ground vehicles.

In addition, two other force enhancements are important to improving our ability to respond to the demanding requirement of two nearly simultaneous MRCs: improvements to reserve component forces and allied force capabilities.

Reserve Component Forces. We have undertaken several initiatives to improve the readiness and flexibility of Army National Guard combat units and other reserve component forces in order to make them

more readily available for MRCs and other tasks. For example, one important role for combat elements of the Army National Guard is to provide forces to supplement active divisions, should more ground combat power be needed to deter or fight a second MRC. In the future, Army National Guard combat units will be better trained, more capable, and more ready. If mobilized early during a conflict, brigade-sized units could provide extra security and flexibility if a second conflict arose while the first was still going on. In addition, the Navy plans to increase the capability and effectiveness of its Navy/Marine Corps reserve air wing through the introduction of a reserve/training aircraft carrier.

Allied Military Capabilities. We will continue to help our allies in key regions improve their defense capabilities. For example, we are assisting South Korea in its efforts to modernize its armed forces and take on greater responsibility for its own defense — including conclusion of an agreement to co-produce F-16 aircraft.

In Southwest Asia, we are continuing to improve our defense ties with friends and allies through defense cooperation agreements, more frequent joint and combined exercises, equipment prepositioning, frequent force deployments, and security assistance. We are also providing modern weapons, such as the M1A2 tank to Kuwait and the Patriot antimissile system to Kuwait and Saudi Arabia, to improve the self-defense capabilities of our friends and allies in the Gulf region.

Peace Enforcement and Intervention Operations

The second set of operations for which we must size and shape our forces involves a variety of contingencies that are less demanding than an MRC but still require significant combat forces and capabilities. Such operations may range from multilateral peace enforcement to unilateral intervention.

The types, numbers, and sophistication of weapons in the hands of potential adversaries in such operations can vary widely. For planning purposes, we assume that the threat we would face would include a

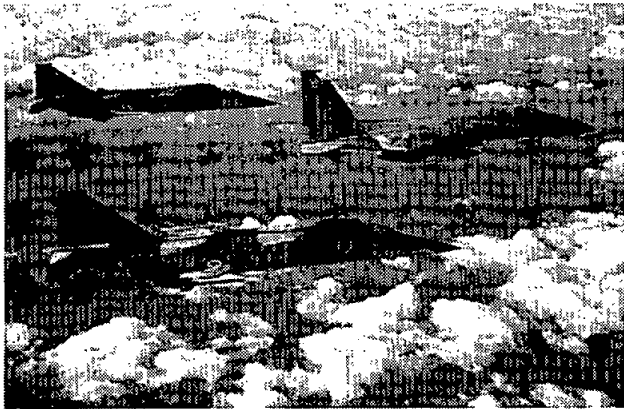
mix of regular and irregular forces possessing mostly light weapons, supplemented by moderately sophisticated systems, such as antitank and antiship guided missiles, surface-to-air missiles, land and sea mines, T-54 and T-72-class tanks, armored personnel carriers, and towed artillery and mortars. Adversary forces might also possess a limited number of mostly older combat aircraft (e.g., MiG-21s, 23s), a few smaller surface ships (e.g., patrol craft), and perhaps a few submarines.

In most cases, U.S. involvement in peace enforcement operations would be as part of a multinational effort under the auspices of the United Nations or some other international body. U.S. and coalition forces would have several key objectives in a peace enforcement or intervention operation, each of which would require certain types of combat forces to achieve:

- Forced entry into defended airfields, ports, and other facilities and seizing and holding these facilities.
- Controlling the movement of troops and supplies across borders and within the target country, including enforcing a blockade or quarantine of maritime commerce.
- Establishing and defending zones in which civilians are protected from external attacks.
- Securing protected zones from internal threats, such as snipers, terrorist attacks, or sabotage.
- Preparing to turn over responsibility for security to peacekeeping units and/or a reconstituted administrative authority.

The prudent level of forces that should be planned for a major intervention or peace enforcement operation is:

- 1 air assault or airborne division
- 1 light infantry division
- 1 mechanized infantry division
- 1 Marine Expeditionary Brigade
- 1 – 2 carrier battle groups
- 1 – 2 composite wings of Air Force aircraft



U.S. F-15 fighter leads two Japanese Self Defense fighters.

- Special operations forces
- Civil affairs units
- Airlift and sealift forces
- Combat support and service support units
- 50,000 total combat and support personnel.

These capabilities could be provided largely by the same collection of general purpose forces needed for MRCs, so long as the forces had the appropriate training needed for peacekeeping or peace enforcement. This means that the United States would have to forgo the option of conducting sizable peace enforcement or intervention operations at the same time it was fighting two MRCs.

Overseas Presence

The final set of requirements used to size general purpose forces are those related to sustaining the overseas presence of U.S. military forces. U.S. forces deployed abroad protect and advance our interests and perform a wide range of functions that contribute to our security.

The Bottom-Up Review reached a number of conclusions on the future size and shape of our overseas presence.

In Europe, we will continue to provide leadership in a reinvigorated North Atlantic Treaty Organization (NATO), which has been the bedrock of European security for over four decades. We plan to retain about 100,000 troops in Europe — a commitment that will

allow the United States to continue to play a leading role in the NATO alliance and provide a robust capability for multinational training and crisis response. These forces will include about two and one-third wings of Air Force fighters and substantial elements of two Army divisions, along with a corps headquarters and other supporting elements. Equipment for bringing these in-place divisions to full strength will remain prepositioned in Europe, along with the equipment of one additional division that would deploy to the region in the event of a conflict.

U.S. Army forces will participate in two multinational corps with German forces. Their training will focus on missions involving rapid deployment to conflicts outside of central Europe and on “nontraditional” operations, such as peace enforcement, in addition to their long-standing mission of stabilization of central Europe. These missions might lead, over time, to changes in the equipment and configuration of Army units stationed in Europe. The Air Force will continue to provide unique theater intelligence, lift, and all-weather precision-strike capabilities critical to U.S. and NATO missions. In addition, U.S. naval ships and submarines will continue to patrol the Mediterranean Sea and other waters surrounding Europe.

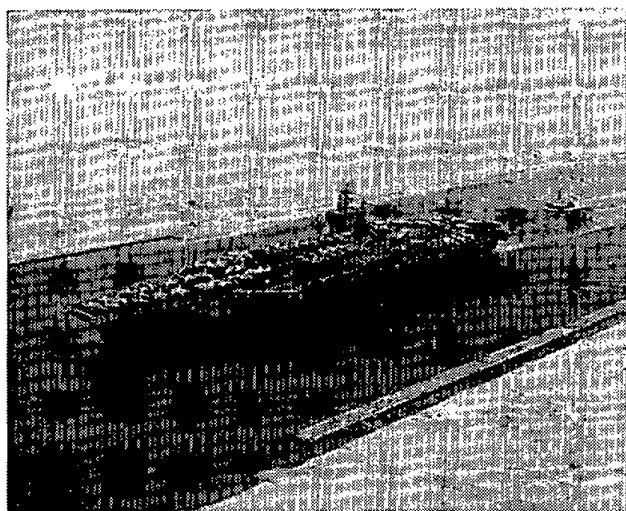
In Northeast Asia, we also plan to retain close to 100,000 troops. As recently announced by President Clinton, our commitment to South Korea’s security remains undiminished, as demonstrated by the one U.S. Army division, consisting of two brigades, and one wing of U.S. Air Force combat aircraft we have stationed there. In light of the continuing threat of aggression from North Korea, we have frozen our troop levels in South Korea and are modernizing South Korean and American forces on the peninsula. We are also exploring the possibility of prepositioning more military equipment in South Korea to increase our crisis-response capability. While plans call for the eventual withdrawal of one of our two Army brigades from South Korea, President Clinton recently reiterated that our troops will stay in South Korea as long as its people want and need us there.

On Okinawa, we will continue to station a Marine Expeditionary Force and an Army special forces

battalion. In Japan, we have homeported the aircraft carrier *Independence*, the amphibious assault ship *Belleau Wood*, and their support ships. We will also retain approximately one and one-half wings of Air Force combat aircraft in Japan and Okinawa, and the Navy's Seventh Fleet will continue to routinely patrol the western Pacific.

In **Southwest Asia**, the absence of a large-scale U.S. military presence will continue to necessitate heavier reliance on periodic deployments of forces, rather than routine stationing of forces on the ground. The Navy's Middle East force of four to six ships, which has been continuously on patrol in the Persian Gulf since 1947, will remain. In addition, we plan to keep a brigade-sized set of equipment in Kuwait to be used by rotating deployments of U.S. forces that will train and exercise there with their Kuwaiti counterparts. We also are exploring options to preposition a second brigade set elsewhere on the Arabian peninsula.

These forces have been supplemented temporarily by several squadrons of land-based combat aircraft that have remained in the Gulf region since Operation Desert Storm and, along with other coalition aircraft, are now helping to enforce U.N. resolutions toward Iraq.



The aircraft carrier USS Dwight D. Eisenhower transiting the Suez Canal.

Another significant element of our military posture in Southwest Asia is the equipment prepositioned on ships that are normally anchored at Diego Garcia. In addition to a brigade-sized set of equipment for the Marine Corps, we have seven afloat prepositioning ships supporting Army, Air Force, and Navy forces.

In **Africa**, we will continue important formal and informal access agreements to key facilities and ports which allow our forces to transit or stop on the African continent. We will also deploy forces to Africa, as in recent operations like Sharp Edge (Liberia) and Restore Hope (Somalia), when our interests are threatened or our assistance is needed and requested. Today, more than 4,000 U.S. troops remain deployed in Somalia as part of the U.N. force seeking to provide humanitarian assistance to that country.

In **Latin America**, our armed forces will help to promote and expand recent trends toward democracy in many countries. They will also continue to work in concert with the armed forces of Latin American countries to combat drug traffickers. The United States will also retain a military presence in Panama, acting as Panama's partner in operating and defending the Panama Canal during the transition to full Panamanian control of the waterway in 1999.

Naval Presence. Sizing our naval forces for two nearly simultaneous MRCs provides a fairly large and robust force structure that can easily support other, smaller regional operations. However, our overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed to win two MRCs. The flexibility of our carriers, and their ability to operate effectively with relative independence from shore bases, makes them well suited to overseas presence operations, especially in areas such as the Persian Gulf, where our land-based military infrastructure is relatively underdeveloped. For these reasons, our force of aircraft carriers, amphibious ships, and other naval combatants is sized to reflect the exigencies of overseas presence, as well as the warfighting requirements of MRCs.

U.S. Navy and Marine forces continue to play important roles in our approach to overseas presence operations. In recent years, we have sought to deploy a sizable U.S. naval presence — generally, a carrier battle group accompanied by an amphibious ready group — more or less continuously in the waters off Southwest Asia, Northeast Asia, and Europe (most often, in the Mediterranean Sea). However, in order to avoid serious morale and retention problems that can arise when our forces are asked to remain deployed for excessively long periods in peacetime, we will experience some gaps in carrier presence in these areas in the future.

In order to avoid degradations to our regional security posture, we have identified a number of ways to fill gaps in carrier presence or to supplement our posture even when carriers are present. For example, in some circumstances, we may find it possible to center naval expeditionary forces around large-deck amphibious assault ships carrying AV-8B attack jets and Cobra attack helicopters, as well as a 2,000-man Marine Expeditionary Unit. Another force might consist of a Tomahawk sea-launched cruise-missile-equipped Aegis cruiser, a guided missile destroyer, attack submarines, and P-3 land-based maritime patrol aircraft.

In addition to these “maritime” approaches to sustaining overseas presence, a new concept is being developed that envisions using tailored joint forces to conduct overseas presence operations. These “Adaptive Joint Force Packages” could contain a mix of air, land, special operations, and maritime forces tailored to meet a theater commander’s needs. These forces, plus designated backup units in the United States, would train jointly to provide the specific capabilities needed on station and on call during any particular period. Like maritime task forces, these joint force packages will also be capable of participating in combined military exercises with allied and friendly forces.

Together, these approaches will give us a variety of ways to manage our overseas presence profile, balancing carrier availability with the deployment of other types of units. Given this flexible approach to provid-



B-2 bombers being refueled by KC-10 tanker.

ing forces for overseas presence, we can meet the needs of our strategy with a fleet of eleven active aircraft carriers and one reserve/training carrier.

Nuclear Forces

The changing security environment presents significant uncertainties and challenges in planning our strategic nuclear force structure. In light of the dissolution of the Warsaw Pact, the breakup of the Soviet Union, the conclusion of the START I and II treaties, and our improving relationship with Russia, the threat of a massive nuclear attack on the United States is lower than at any time in many years.

However, a number of issues affecting our future strategic nuclear posture must still be addressed. Tens of thousands of nuclear weapons continue to be deployed on Russian territory and on the territory of three other former Soviet republics. Even under START II, Russia will retain a sizable residual nuclear arsenal. And, despite promising trends, the future political situation in Russia remains highly uncertain.

In addition, many obstacles must be overcome before the ratification of START II, foremost of which are Ukrainian ratification of START I and Ukraine’s and Kazakhstan’s accession to the Nuclear Nonproliferation Treaty as non-nuclear-weapon states —

a condition required by Russia prior to implementing START I. Moreover, even if these obstacles can be overcome, implementation of the reductions mandated in START I and II will not be completed for almost 10 years. Thus, while the United States has already removed more than 3,500 warheads from ballistic missile systems slated for elimination under START I (some 90 percent of the total required), in light of current uncertainties, we must take a measured approach to further reductions.

Two principal guidelines shape our future requirements for strategic nuclear forces: providing an effective deterrent while remaining within START I and II limits, and allowing for additional forces to be reconstituted in the event of a threatening reversal of events.

The Bottom-Up Review did not address nuclear force structure in detail. As a follow-up to the review, a comprehensive study of U.S. nuclear forces is being conducted. For planning purposes, we are evolving toward a future strategic nuclear force that by 2003 will include:

- 18 Trident submarines equipped with C-4 and D-5 missiles.
- 500 Minuteman III missiles, each carrying a single warhead.
- Up to 94 B-52H bombers equipped with air-launched cruise missiles and 20 B-2 bombers.

SECTION IV

BUILDING AN OVERALL FORCE STRUCTURE

Determining the overall force structure needed to provide the building blocks we have identified for new dangers and opportunities rests on the key question: How many of each type of building block might need to be engaged at once? The answer depends on the nature and number of dangers that threaten us at any given time. Figure 6 shows where and how we will need to engage building blocks as the international environment shifts from peacetime to multiple crises or conflicts and back to peace.

In peacetime, we will conduct routine overseas presence operations. Moreover, the nature of the new regional dangers and our recent experience suggests that we will also need building blocks for lower-scale operations such as peacekeeping and peace enforcement, as well as humanitarian assistance and disaster relief activities. Beyond these types of operations, we will routinely hold large forces in "strategic reserve."

Conflict Dynamics

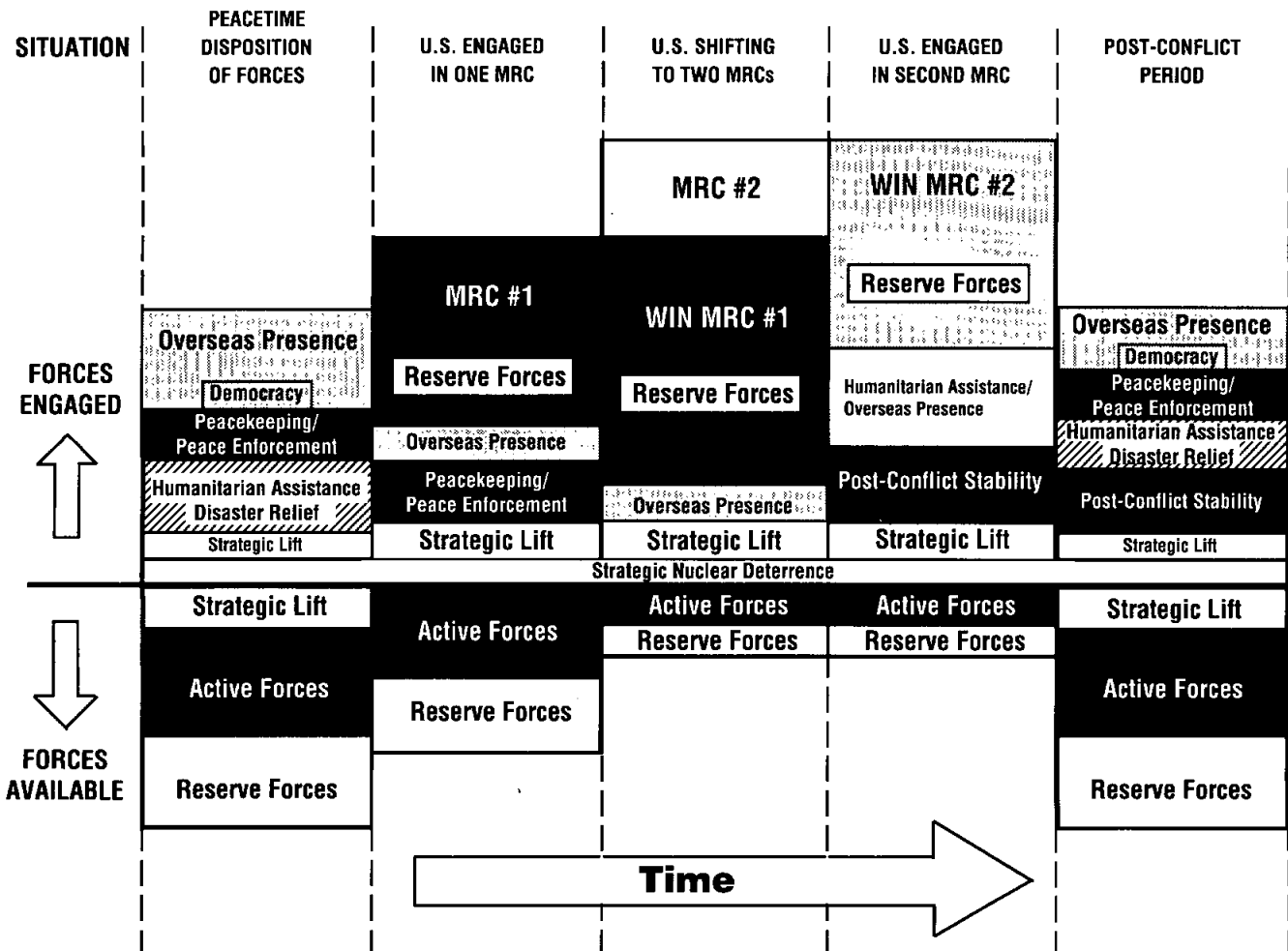


Figure 6

If a major regional conflict erupts, we will deploy a substantial portion of our forces stationed in the United States and draw on our overseas presence forces to put in place the capabilities needed to first halt and then defeat an aggressor. If we feel it is prudent to do so, we can keep other forces engaged in a smaller-scale operation like peacekeeping while responding to a single MRC.

If a second MRC breaks out shortly after the first, we will need to pull together and deploy another building block of forces to assist our allies in the threatened area in halting and defeating the second aggressor. The forces for that effort would come from a further reallocation of overseas presence forces, any forces still engaged in smaller-scale operations, and most of our remaining forces based in the United States. These forces would include a combination of air, ground, and maritime units deployed concurrently with those dispatched to the first MRC. Selected high-leverage and mobile intelligence, command and control, and air capabilities would be redeployed from the first MRC to the second as circumstances permitted. As will be described later, combat forces in the National Guard and reserves would play an important role in creating this building block.

As also shown in Figure 6, while the force building blocks would shift in order to provide the capability to fight two MRCs, there will continue to be a simultaneous requirement for forces and capabilities to maintain strategic nuclear deterrence, conduct overseas presence, peace enforcement, or other types of intervention operations, and provide a strategic reserve of mostly Guard and reserve forces back in the United States.

Once we had won both MRCs, our forces would assume a more routine, peacetime posture. However, as Figure 6 depicts, some forces would probably remain in the regions to maintain stability and to prevent any further problems from arising in the conflicts' aftermath.

Overall Force Structure

On the basis of a comprehensive assessment of U.S. defense needs, the Bottom-Up Review determined that the force structure shown in Figure 7, which will be reached by about the end of the decade, can carry out our strategy and meet our national security requirements.

U.S. Force Structure – 1999

Army	10 divisions (active) 5+ divisions (reserve)
Navy	11 aircraft carriers (active) 1 aircraft carrier (reserve/training) 45–55 attack submarines 346 ships
Air Force	13 fighter wings (active) 7 fighter wings (reserve) Up to 184 bombers (B-52H, B-1, B-2)
Marine Corps	3 Marine Expeditionary Forces 174,000 personnel (active end-strength) 42,000 personnel (reserve end-strength)
Strategic Nuclear Forces (by 2003)	18 ballistic missile submarines Up to 94 B-52H bombers 20 B-2 bombers 500 Minuteman III ICBMs (single warhead)

Figure 7

This force structure will meet our requirements both for overseas presence in peacetime and for a wide range of smaller-scale operations. It will also give the United States the ability to prevail in the most stressing situation we may face — two major regional conflicts occurring nearly simultaneously.

In addition, the force structure provides sufficient capabilities for strategic deterrence and defense. It also provides enough forces, primarily reserve component, to be held in strategic reserve and utilized if and when needed. For example, reserve forces could deploy to one or both MRCs, if operations do not go as we had planned. Alternatively, they could be used to “backfill” for overseas presence forces redeployed to an MRC.

Within this overall force structure, each of the services will be making changes in order to support the defense strategy and provide the capabilities needed to win major regional conflicts quickly and decisively.

Army. Forward stationing of Army forces will be reduced, but greater use of prepositioning will improve the Army’s ability to introduce heavy forces early in a conflict. Battlefield mobility and flexibility will be enhanced through helicopter and other selected modernization programs. Thus, although smaller, the Army will be more capable of delivering decisive combat power early to a distant region.

Navy. While cutting significantly the forces devoted to “blue water” sea control, the Navy is undertaking improvements and innovations in naval air and amphibious lift that will enhance its ability to bring power to bear in a land battle.

Air Force. The Air Force will also be reshaped to increase its ability to bring early firepower to regional battlefields. This will come through utilizing all of its assets — from long-range bombers to short-range strike aircraft — and enhancing their capabilities with improved munitions and the continued introduction of stealth technology. Airlift capabilities will also be modernized to ensure the rapid flow of personnel and equipment to distant regions when needed.

Marine Corps. Through prudent modernization, prepositioning, and a high level of training, the Marine Corps will capitalize on its ability to bring ready and well-supported combat capability to a battlefield quickly and effectively.

Analysis of Alternative Force Structures and Mixes

In the analysis supporting the Bottom-Up Review, four separate force structure options were investigated. The options were designed to meet successively more demanding regional defense strategies. Figure 8 illustrates the range of options considered. Option 3 — a force structure adequate to win two nearly simultaneous MRCs — represents, in broad terms, the approach we have chosen.

Option 1 would require the fewest resources, allowing us to reduce the defense budget and redirect excess funds to other national priorities. But, in providing only enough forces and capabilities to fight one major regional conflict at a time, this option would leave us vulnerable to the possibility that a potential aggressor might choose to take advantage of the situation if virtually all of our forces were already engaged in a conflict elsewhere. At a minimum, choosing this approach would require us to scale back or terminate certain existing mutual defense treaties and long-standing commitments, with a corresponding reduction in our influence in those regions where we chose to abandon a major leadership role.

Option 2 frees additional resources for other national priorities, but is premised on the risky assumption that, if we are challenged in one region, respond to the aggression, and then are challenged shortly afterwards in another region, a sizable block of our remaining forces will have the stamina and capability to defeat the first adversary, move to another region possibly several thousand miles distant, and defeat a second adversary. Choosing this option might provide sufficient military strength in peacetime to maintain America’s global leadership, but it would heighten the risk in wartime associated with carrying out a two-MRC strategy.

Force Options for Major Regional Conflicts

STRATEGY	1	2	3	4
	Win One MRC	Win One MRC with Hold in Second	Win Two Nearly Simultaneous MRCs	Win Two Nearly Simultaneous MRCs Plus Conduct Smaller Operations
Army	<ul style="list-style-type: none"> • 8 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 6 Reserve Division Equivalents 	<ul style="list-style-type: none"> • 10 Active Divisions • 15 Reserve Enhanced-Readiness Brigades 	<ul style="list-style-type: none"> • 12 Active Divisions • 8 Reserve Enhanced Equivalents
Navy	<ul style="list-style-type: none"> • 8 Carrier Battle Groups 	<ul style="list-style-type: none"> • 10 Carrier Battle Groups 	<ul style="list-style-type: none"> • 11 Carrier Battle Groups • 1 Reserve Carrier 	<ul style="list-style-type: none"> • 12 Carrier Battle Groups
Marine Corps	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division 	<ul style="list-style-type: none"> • 5 Active Brigades • 1 Reserve Division
Air Force	<ul style="list-style-type: none"> • 10 Active Fighter Wings • 6 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 13 Active Fighter Wings • 7 Reserve Fighter Wings 	<ul style="list-style-type: none"> • 14 Active Fighter Wings • 10 Reserve Fighter Wings
			Force Enhancements	

Figure 8

Option 3 provides sufficiently capable and flexible military forces to position the United States to be a leader and shaper of global affairs for positive change. It allows us to carry forward with confidence our strategy of being able to fight and win two major regional conflicts nearly simultaneously. However, it leaves little other active force structure to provide other overseas presence or to conduct peacekeeping or other lower-intensity operations if we had to fight two MRCs at once. If such tasks became necessary, or if either MRC did not evolve as we anticipated, then we might be required to activate significant numbers of reserve component forces. Also key to the Option 3 force's ability to carry out its strategy are a series of critical force enhancements described in Section III, including additional repositioning of brigade sets of equipment,

increased stocks of antiarmor precision-guided munitions, more early-arriving naval air power, and other initiatives.

Option 4 would allow us to fight and win two MRCs nearly simultaneously while continuing to sustain some other overseas presence and perhaps an additional peacekeeping, peace enforcement, or other intervention-type operation. However, to maintain forces of this size would require significant additional resources, thereby eliminating any "peace dividend" the American people are expecting as a result of the end of the Cold War. Yet our analysis showed that, despite this larger investment, Option 4 would provide only a small increment of increased military capability.

Assessment of Alternative Force Mixes

Each of the four strategy and force structure options was tested by "weighting" the various mixes in favor of land, sea, or air contributions. The analysis indicated that, in some circumstances, placing emphasis on certain types of forces or capabilities could help offset the loss of certain other capabilities or forces. For example, additional ground forces might be able to compensate for the loss of some air contributions when dealing with guerrilla or insurgency threats where terrain is thick and constrained, or where the enemy is not technologically advanced. Alternatively, the substitution of air power for some ground forces might be supportable in cases where terrain is open, the enemy is highly dependent on key industries, resources, or utilities, or heavy armored forces are engaged in some other conventional conflict. Even among air compo-

nents, certain environments or circumstances favor the use of land-based versus sea-based air forces or vice versa.

Nevertheless, while the analysis indicated that a force structure geared toward particular types of forces might enhance overall capabilities under very specific conditions, it would also create serious vulnerabilities under other circumstances. Given the great uncertainty as to where, when, and how future crises might occur, anything but a carefully balanced force will risk ineffectiveness, high casualties, or a failure to meet objectives. The basic conclusion of the analysis was that the balanced force structure we have selected is the best choice to execute our defense strategy and maintain the flexibility needed to deal with the wide range of dangers we may face.

SECTION V: MODERNIZATION

INTRODUCTION

Along with developing a strategy to address new dangers and seize new opportunities, and planning capable and ready forces to carry out that strategy, we must also ensure that America's armed forces remain the best equipped in the world. Thus, as part of the Bottom-Up Review, we conducted a comprehensive evaluation of key modernization programs within the Department of Defense. Throughout the process, a number of considerations helped shape our assessment of future modernization needs and guided our decisions on weapon system acquisitions.

Of foremost concern was operational need. We began with an assessment of the strategies to be carried out by U.S. combatant commanders in the future, evolving threats to which those strategies must respond, and promising approaches to addressing those threats. In the past, our weapons were designed almost exclusively to counter Soviet systems. In the post-Cold War era, our weaponry and equipment must be able to deal with myriad potential threats and with weapon systems of various origin. Moreover, we must be prepared to employ our military systems in a wide range of physical environments and operational settings. Improved interoperability with the forces of other countries is also a high priority.

Second, our evaluation was guided by the prospects for a variety of new technologies to provide substantial enhancements to the capabilities of U.S. weapon systems — those that are already operational as well as those in development. The review took into account the potential contributions of enhanced support systems (such as surveillance and communications assets), advanced munitions, and new major systems, seeking to identify those that could provide the greatest "value added" under a constrained budget.

The technological revolution now taking place has a number of implications for the design and upgrade of military systems:

- In order to take best advantage of technological advances, the entire weapons procurement cycle must be shortened, so that weapon systems fielded today are not dependent on the technology of a decade ago.
- The revolution in weapons technology also suggests that we must reexamine our concepts for employing certain weapons — tanks, aircraft, missiles, and the like — on the battlefield. Advances in information technology, materials, and electronics, if properly incorporated into weapons, hold promise of providing significant advantages for U.S. forces against potential adversaries.

A third important consideration in our modernization review was the changing nuclear threat and its implications for future U.S. defense strategy. Because of the transformation in the relationship between the United States and Russia, as exemplified by the dramatic nuclear reductions called for in the START I and START II treaties, we do not have to invest as many resources in nuclear deterrence as was the case at the height of the Cold War. At the same time, the proliferation of weapons of mass destruction presents a new challenge to U.S. security that must be taken into account and guide our research and development efforts in the coming years.

Finally, ensuring the long-term viability of critical elements of the defense industrial base played a significant role in our deliberations. The defense industrial base will shrink substantially as a result of the reductions in defense spending that have been occurring and are projected for the future. However, it is important that this adjustment be accomplished carefully, with an eye toward preserving those parts of the industrial base that are essential to our long-term defense needs and that would be difficult or costly to reconstitute once lost.

The modernization review focused on major programs that involve the potential for significant investment. These programs include:

- Theater air forces
- Attack and reconnaissance helicopters
- Ballistic missile defense
- Aircraft carriers

- Attack submarines
- Space launch
- Military satellite communications
- V-22 Osprey tilt-rotor aircraft

Summaries of our findings in each of these areas are presented in the remainder of this section.

SECTION V: MODERNIZATION

THEATER AIR FORCES

Theater air forces provide the United States the ability to project military power rapidly and effectively in defense of vital interests. In times of crisis, the prompt availability of these forces helps to deter aggression and protect U.S. and allied interests. If conflicts arise, U.S. air power provides a versatile, fast, and lethal means of countering hostile forces and neutralizing enemy threats in the air, at sea, and on the ground. We saw this vividly demonstrated in Operation Desert Storm.

By virtue of their rapid responsiveness and operational flexibility, theater air forces are well suited to the demands of the new defense strategy. As the focus of planning shifts from global war to regional conflicts, as our overseas presence declines, and as our forces grow smaller, we recognize that theater air forces will undoubtedly play an even greater role in any future conflict in which the United States is engaged. The effectiveness of air operations in the Persian Gulf War underscores the necessity of funding theater air modernization at a level sufficient to maintain our technological edge and our domination of the skies.

The Problem

A number of combat aircraft that were key to our success in Operation Desert Storm and have been the core of our aviation structure for many years are aging and must be replaced. For example, by 1995, the average age of the Navy's inventory of A-6 Intruder medium-attack aircraft will be more than 20 years — the age at which such aircraft have typically been retired — and some will be even older. Other airframes, including the F-15C/D Eagle, F-16A/B Fighting Falcon, and F-14A/D Tomcat, will need to be retired beginning early in the 21st century.

Replacing these airframes is a complex and expensive undertaking involving difficult trade-offs. The selection of replacement aircraft is complicated by several factors and questions that were considered as

theater air modernization requirements were evaluated for the Bottom-Up Review.

First, new aircraft that incorporate important advances in low observability ("stealth"), advanced avionics, greater range and speed, and improved munitions are quite expensive, with the cost per aircraft averaging 30 to 50 percent more than that of current-generation systems. Thus, we must determine how many of what types of these new aircraft are affordable, and what level of technology they should incorporate.

Second, during the Cold War, we sized and shaped our theater air forces to meet the formidable threat of a global conflict with the Soviet Union. With the dissolution of the Warsaw Pact and the Soviet Union, we can reduce the overall size of our combat air structure while selectively modernizing it in order to maintain its superiority over any potential aggressor. In determining how many of what types of new aircraft are needed, we had to carefully assess the projected threats that our aircraft are likely to face in this new, post Cold-War world, both from advanced aircraft and from modern air defenses.

Third, certain modernization requirements are more pressing than others. As mentioned earlier, the A-6 is the airframe in greatest need of early replacement. Our general approach on theater air modernization was to make only those programmatic decisions that needed to be made now in order to correct current deficiencies, while protecting our flexibility in choosing modernization options in the future.

Fourth, while there is only one U.S. Air Force, both the Navy and Marine Corps have sizable tactical aviation elements that include different types of advanced, fixed-wing combat aircraft. Historically, the Air Force and the Navy have developed new combat aircraft separately and individually — efforts at joint development of a single aircraft type to meet the requirements of both services have met with very limited success.

Nevertheless, our review analyzed the potential for substantial cost savings through joint Air Force-Navy development of single aircraft types and components to meet the requirements of both services.

Fifth was the issue of the defense industrial base. With the drawdown in our defense structure comes a reduced need for aircraft production capacity. Currently, nearly all aircraft prime contractors are operating at approximately 50 percent of capacity, and that figure is projected to decline to 40 percent by the year 2000. In looking at modernization options, we had to consider how best to preserve needed aircraft design and production capacity and competitiveness, while allowing the defense companies that remain to transition smoothly to reduced requirements.

Sixth, as we reduce our overall forces and defense funding levels we will not be able to afford several types of special-purpose aircraft. Multirole aircraft capable of air superiority, strike, and possibly support missions have a high "payoff."

While taking account of these issues, we also had to address such related factors as the proper allocation of roles, missions, and functions among the services. For example, the Bottom-Up Review considered how Marine Corps aviation could best be modernized, and how it might be better integrated with the Navy's carrier battle groups. A second "roles and missions" issue was whether naval aviation should continue to stress the capability to strike so-called "deep interdiction" targets – a requirement for which the A-6 and its successor, the A/F-X, are both specifically designed.

The Threat

With the demise of the Soviet Union and the Warsaw Pact, the threats that U.S. combat aircraft will face over the next decade are likely to be less intense than was the case during the Cold War. However, the countries of the former Soviet Union, especially Russia and Ukraine, as well as France and other Western states continue to field sophisticated fighter aircraft and ground-based air defense systems, including high-performance surface-to-air missiles, that in many ways

match and possibly exceed the capabilities of our own currently fielded systems. More important, these countries are aggressively selling their most advanced weapons in the international market, which increases the potential for countries hostile to our interests acquiring far more capable aircraft and air defense systems.

Moreover, Russia, France, and other countries are carrying out sophisticated development programs for aircraft, air-to-air missiles, and surface-to-air missiles with dramatically improved lethality. These systems are likely to be sold internationally over the next decade.

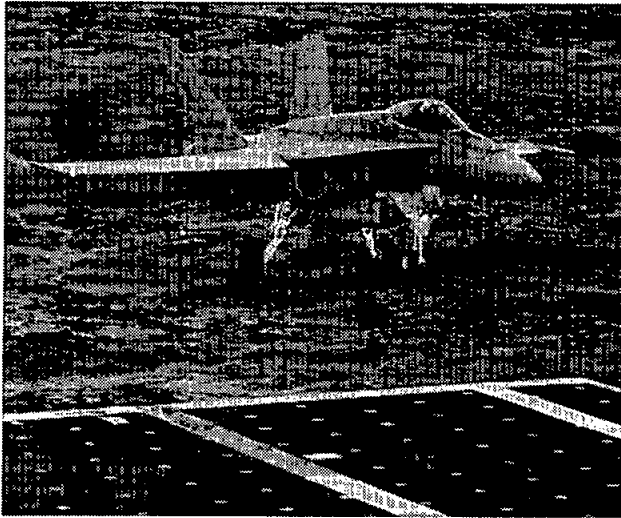
Current Theater Air Programs

Currently, there are a number of theater air modernization programs underway and in various stages of development.

- The F-22 is being developed by the Air Force as its air-superiority fighter for the future. The designated replacement for the F-15 C/D, the F-22 is currently well into engineering development, with procurement scheduled to begin in 1997. The aircraft is slated to enter operation in 2003.

- The F/A-18 E/F aircraft is a derivative of the current multimission, carrier-capable F/A-18 A/B/C/D models. It is considered a relatively low-risk development program that will provide a more advanced fighter and attack capability, including greater payload and range, as well as improved survivability because of enhanced low-observable features. The F/A-18 E/F is to replace some F/A-18s, F-14s, and A-6s beginning in 2001.

- The A/F-X Advanced Strike Aircraft is a multirole, carrier-capable aircraft being developed jointly by the Navy and the Air Force to replace the Navy's A-6 and F-14 fleets and the Air Force's F-111, F-15E, and F-117 aircraft. The A/F-X incorporates stealth technology, along with advanced avionics, countermeasures, and other performance improvements. The aircraft is still in the early developmental stage (concept definition is complete but a specific design



Navy F/A-18 aircraft landing on an aircraft carrier.

has not yet been selected), with initial deployment planned for 2008.

- The Multirole Fighter (MRF) is envisioned as a relatively low-cost but stealthy replacement for the Air Force's F-16 multirole aircraft, and perhaps for Navy and Marine Corps F/A-18 aircraft, beginning in 2015.

The dilemma we faced as we began the Bottom-Up Review was a recognition that, given the tremendous costs entailed in buying these aircraft, proceeding with all of them as planned would absorb a significant percentage of our overall research and development and procurement funding both in the near term and beyond.

The total cost for all four programs has been estimated to be almost \$320 billion in FY 1994 dollars. Much of this funding would be required in the years beyond the 1994-99 Future Years Defense Program (FYDP) — the so-called “bow wave” effect — meaning that decisions taken now on aircraft modernization will affect how we spend scarce procurement dollars for years to come. Even within the FYDP period, costs would be significant, totaling over \$33 billion. Thus, to pursue all of these programs simultaneously would have meant deferring or canceling other vital weapons modernization programs over the next decade. We needed to examine alternatives.

Options Examined

Several alternative strategies for modernizing our theater air forces were considered. The options were evaluated in terms of their costs and capabilities, responsiveness to operational requirements, and other parameters.

The various modernization options were assessed against postulated threats during three different time periods (2003, 2013, 2023) in a large-scale theater air campaign. The results indicated that options of similar cost produced relatively equal levels of effectiveness, with no single option standing out as the most cost-effective. This led to the conclusion that no single modernization option identifiable at this time could best meet our anticipated theater air requirements for the next thirty years.

Accordingly, we elected to take a different approach — making only the theater air decisions that need to be made today and preserving maximum flexibility for future program choices.

The Decision

The incremental approach we have adopted makes the decisions that must be made now: (1) replacing the Navy's aging A-6 ground attack aircraft, and (2) proceeding with the F-22 to ensure technology dominance. In summary:

- We will proceed with development and procurement of the F/A-18 E/F to achieve initial operational capability in 2001. Once production of the E/F version has begun in 1997, production of the F/A-18 C/D model will be terminated.
- We will retire all A-6 aircraft by 1998. To help compensate for the A-6's retirement, we will upgrade the F-14 with a limited ground-attack capability.
- We will also proceed with development and procurement of the F-22, looking toward an initial operational capability by 2003. The F-22's

quantum improvements in stealth, "supercruise" capability, and avionics will make it the best air-superiority fighter in the world for the foreseeable future. We will also incorporate a precision ground-attack capability into the F-22 at the very outset of production, thus providing a multirole capability that greatly improves the aircraft's utility and cost-effectiveness.

- We will cancel the A/F-X and the MRF. We also plan to terminate all production of the F-16 after FY 1994. These actions will save significant funds both over the FYDP period and in future years.



Developmental version of Air Force's F-22 aircraft.

Additionally, we will launch a Joint Advanced Strike Technology Program that focuses on developing common components for future engines, avionics, ground support, training, munitions, and advanced mission planning. The technologies pursued under this program could be used with any future combat aircraft the nation decides to build. These common technologies account for the bulk of the cost incurred in acquiring and operating aircraft. Different airframes — the chief differentiator between land-based and carrier-based aircraft — are a lesser part of overall aircraft costs. Thus, we are aiming for a combat aircraft that, in terms of cost, is 80 percent "joint," although there may be different airframe silhouettes. We believe this will significantly reduce development and production

costs for the next generation of Navy and Air Force aircraft, even if we elect to proceed with different airframes.

The Joint Advanced Strike Technology program will develop several technology demonstrator aircraft to explore different technologies that could be incorporated into future aircraft. From these technology demonstrators, prototype aircraft would then be developed to help choose the next-generation replacement for the A-6, F-14, F-16, and F-111 as they reach the end of their service lives.

We will also strengthen supporting capabilities. First, this involves a joint munitions program to ensure that high-leverage, highly accurate weapons (such as the Joint Standoff Weapon and Joint Direct Attack Munition) are available to destroy targets with minimum collateral damage. Second, we will improve our targeting capabilities so that we can better utilize these weapons. Third, we will improve the conventional bombing capabilities of our long-range B-1, B-2, and B-52 bombers.

Our program will also protect the industrial base necessary to meet projected theater air modernization needs. Production of both the F/A-18 E/F and the F-22 at modest annual rates will allow us to preserve aircraft production lines for other future needs. Development of these aircraft, as well as our joint advanced technology program, will allow us to maintain critical aircraft design teams.

This approach to theater air modernization — proceeding with the F/A-18 E/F and F-22, and with a robust technology development and demonstration effort to lay the foundation for future aircraft selection — provides a sound combination of programs that responds to foreseeable mission requirements, affordability concerns, a new threat environment, and priorities for replacement, while simultaneously preparing for future operational needs.

SECTION V: MODERNIZATION

ATTACK AND RECONNAISSANCE HELICOPTERS

The Army has two main types of armed helicopters: attack and reconnaissance. Attack helicopters engage and destroy armored vehicles and other enemy targets. Reconnaissance (or "scout") helicopters perform intelligence-gathering, surveillance, and target acquisition and designation missions.

Army combat helicopters contribute in important ways to the new post-Cold War defense strategy. In times of crisis, they can either self-deploy or be airlifted to distant areas, arriving in significantly less time than ground forces. Moreover, they provide substantial combat power relative to the amount of air transport required to deploy them. With their ability to adapt and perform multiple roles on the modern battlefield, combat helicopters are key contributors to the Army's ability to conduct the fast-paced, maneuver-type warfare that we expect to dominate future conflicts.

The Army currently has about 3,300 combat helicopters of five different types: the OH-6 and OH-58A/C Kiowa, which are reconnaissance helicopters; the AH-1 Cobra and OH-58D Kiowa Warrior, which perform armed reconnaissance and attack missions in support of light forces; and the AH-64A Apache, an attack helicopter. Under the Aviation Redesign Initiative, the Army is reducing the size of its helicopter fleet as part of its overall force reduction, while modernizing the helicopter forces that remain.

The Problem

The majority of OH-58 A/Cs and AH-1s have met or exceeded their expected service life of 20 years and are in need of replacement. The OH-58D and AH-64 are newer, but have not been produced in the quantities or with the capabilities needed to meet all of the Army's attack and reconnaissance requirements.

In addition, recent joint exercises and operations, including Operation Desert Storm, have identified a number of operational shortfalls in the armed recon-

naissance/light attack helicopter fleet. These include limited night and adverse weather capability; inadequate reliability, maintainability, and supportability; insufficient survivability; inability to destroy the full range of ground targets; limited shipboard compatibility; limited air-to-air combat capability; and other deficiencies.

Army Aviation Modernization Plan

During the previous administration, the Army developed a modernization plan for attack and reconnaissance helicopters that included three main components:

- Modifying existing AH-64As to the AH-64 C/D Longbow configuration. The mast-mounted Longbow fire control radar enhances the survivability and targeting capability of attack helicopters. It allows them to fire rapidly on large numbers of air or ground targets, even in adverse weather, when used in conjunction with an advanced Hellfire missile. After firing the current laser-guided Hellfire, a helicopter must remain in the vicinity of the target in order to guide the missile while it is in flight; this exposes the helicopter to enemy fire. The Longbow Hellfire uses a new "fire and forget" guidance system that does not require a designator, thus improving helicopter survivability. Approximately 227 Apaches would be modified to the "D" version and another 529 would become AH-64 Cs. The D models would receive Longbow radars, new improved engines, and other enhancements. The AH-64 Cs would receive modifications enabling them to carry and fire Longbow Hellfire missiles, but they would not actually be outfitted with the new fire control radar.

- Procuring the RAH-66 Comanche helicopter for the armed reconnaissance mission or attack mission in support of light forces. The plan was to buy approximately 1,300 Comanches, of which about one-third would be equipped with a downsized Longbow

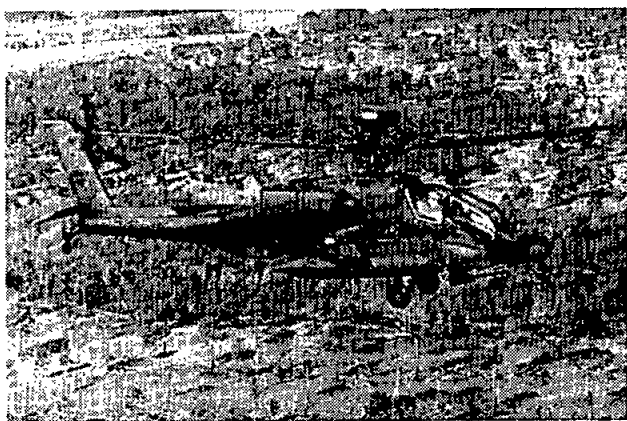
system. The Comanche is a state-of-the-art helicopter that provides better self-deployability, greater night and adverse weather capability, improved lethality and air combat capability, higher survivability and reliability, and lower operating and support costs.

- Purchasing additional OH-58D helicopters until the Comanche is introduced. To fill the near-term gap in production until the Comanche is deployed, approximately 350 OH-58D Kiowa Warriors would be purchased and fielded as interim armed reconnaissance/light attack helicopters. This element of the Army's plan has, in fact, already been mostly funded, with production scheduled to be completed in FY 1995.

The Threat

The primary threats to attack and reconnaissance helicopters are surface-to-air missiles and antiaircraft artillery. These weapons are relatively inexpensive, often simple to operate, and are found in very large numbers worldwide. Other attack helicopters armed with air-to-air missiles and cannons could also pose a threat.

In the past, our helicopter forces were designed primarily to counter Soviet air defenses and combat aircraft. In the post-Cold War era, our principal concern in considering attack and reconnaissance helicopter requirements is the air defenses, combat aircraft, and missiles projected to be deployed by regional



AH-64 Apache helicopter with Longbow radar.

powers we might have to face. In assessing the utility of the Longbow system on the AH-64D and RAH-66, we also need to consider existing and projected future techniques of concealment and countermeasures that could reduce Longbow's effectiveness.

As with other types of weapons, the demise of the Soviet Union and the need for hard currency by the former Soviet republics has meant that Soviet weapons, including advanced air defense systems and combat helicopters, are being exported in significant number. Other European countries are also manufacturing and marketing such systems. As these weapons proliferate, the threat emerging in some regions, particularly the Middle East, could approach that previously found only in Europe, although inventory levels and the capability to integrate air defenses could be a limiting factor. This prospect makes the survivability, lethality, and other enhancements of the RAH-66 and AH-64D Longbow a priority.

Options Examined

Three options for modernizing the attack and reconnaissance helicopter force were examined:

- **Option 1** would maintain the previously planned modernization program, procuring and fielding both the AH-64 C/D with Longbow and the RAH-66 Comanche. One-third of the RAH-66 fleet would be fielded with the Longbow fire control radar. The Army's AH-1 and OH-58 A/C and D helicopters would be phased out as the new systems became operational.

- **Option 2** would terminate the RAH-66 program but retain the AH-64 C/D. The AH-64 modification program would be the same as under Option 1, except that additional AH-64s would be purchased to perform the heavy attack mission. Additional OH-58D aircraft would be procured to perform the light attack/armed reconnaissance mission. This option also phases out the Army's AH-1s and OH-58 A/Cs.

- **Option 3** would terminate the AH-64 C/D modification program and procure and field the RAH-66 without the Longbow radar. The Longbow radar

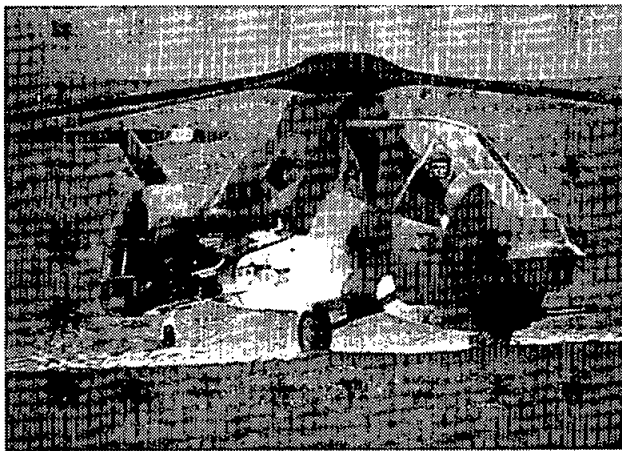
would be returned to a technology base program until the technology has further matured. No Longbow-capable Hellfire missiles would be procured. The AH-1 and OH-58 A/C and D would be phased out.

A fourth option that would have terminated both the AH-64 C/D and the RAH-66 was considered in the initial stages of the review. That option was rejected because it did not meet the combat helicopter requirements of the new defense strategy.

Marine Corps attack/reconnaissance helicopters were excluded from the review. The Marine Corps does not employ armed reconnaissance helicopters, and the AH-1W is its only attack helicopter. The AH-1W is a shipboard-compatible system currently produced at the rate of 12 per year. Altering this program by the introduction of an additional type of helicopter or replacing the AH-1W in the near term would not offer any cost savings or increase the effectiveness of Marine Corps attack helicopters. However, the Bottom-Up Review did look at replacing the Army's Comanche helicopter with the AH-1W and determined that it was not the best option.

Evaluation of Options

The options were evaluated according to four criteria: (1) combat effectiveness; (2) technical risk; (3) acquisition and life-cycle cost; (4) and effects on the defense industrial base.



RAH-66 Comanche helicopter.

Much of the analysis was derived from previous studies. Those earlier studies had looked at a range of scenarios and threat levels, involving company through corps-level missions, and they included evaluations of the lethality, survivability, sustainability, and deployability of alternative helicopter forces.

A group of outside experts was asked to evaluate the analysis conducted for the Bottom-Up Review. The group concluded that there was some technical risk associated with Longbow's development. One such risk was the radar's inability to recognize and identify, as well as detect and classify, stationary ground targets at the longer ranges from which it could enable missiles to be fired. This poses a potential "identification of friend and foe" problem. But the group concluded that the risk was manageable, and that the advantages of the system, even if this full capability cannot be obtained, make it a very cost-effective force enhancement.

The cost analysis led to the conclusion that modernization is not the major contributor to the total cost of any option. Longbow adds approximately 10 percent to the life-cycle cost of Options 1 and 3, and the Comanche constitutes about one-third of the cost of Option 1. Overall, Option 3 is the lowest-cost near-term option, but it saves little over the long term. Option 2 saves little during the FYDP period, but it does reduce long-term costs significantly.

The industrial base assessment concluded that the modernization options could all be executed with the current helicopter industrial base, which has considerable excess design, engineering, and production capacity. Option 3 would probably lead to the loss of one prime contractor, but it would increase the utilization of the other three major helicopter manufacturers. If both the RAH-66 and V-22 were developed and fielded, the United States would probably retain its more than 50 percent share of the world's civil and military helicopter market. Without these programs, that figure would drop to 40 percent.

Option 1. The previously planned program provides significant improvements in both lethality and survivability and solves many of the current deficiencies in night and adverse weather capability. It provides a balanced, deployable, and sustainable fleet. But it also is the most costly of the three options at any of the force levels considered.

Option 2. By terminating the RAH-66 program, this option emphasizes near-term improvements in the attack helicopter inventory but leaves major deficiencies in armed reconnaissance capabilities. The technical risks associated with the Longbow program remain. Option 2 is the least costly of the three alternatives over the program lifetime, but it costs more in the near term because of the investment in OH-58Ds and improved AH-64s.

Option 3. By terminating Longbow but proceeding with the RAH-66, this option makes long-term improvements in scout and armed reconnaissance capability, but only modest upgrades to attack capability. Although it is the lowest-cost near-term alternative, Option 3 offers the least improvement in antiarmor capability while abandoning Longbow's potentially high cost-effectiveness if deployed on both the AH-64 and RAH-66.

The Decision

We have decided to proceed with Option 1 — fielding both the RAH-66 Comanche and AH-64 C/D with Longbow — for a variety of reasons. First, the cost during both the FYDP period and beyond is not a significant discriminator, given the improvements in capability both systems provide.

Second, proceeding with both Apache (Longbow) and Comanche yields capabilities that are complementary and not directly substitutable for one another. The RAH-66 provides significant improvements in all mission areas and alleviates age and operational shortfalls in the reconnaissance/scout fleet. It also brings technical advances in stealth and avionics. Although the value of reconnaissance is difficult to measure, our experience in the Persian Gulf War and other recent operations has shown that the battlefield information that reconnaissance helicopters provide is becoming increasingly important in modern warfare. Longbow will enhance the survivability, lethality, and target detection capability of both armed reconnaissance and attack helicopters. While it will require a significant investment in the near term, this expenditure will yield real dividends in the longer term. However, the technical and cost-growth risks associated with both Longbow and Comanche will need to be monitored and carefully managed, since both systems are on the cutting edge of technology and have significant development time remaining.

SECTION V: MODERNIZATION

BALLISTIC MISSILE DEFENSE

Throughout the Cold War, both the United States and the Soviet Union conducted research and development on ways to defend against nuclear-armed ballistic missiles. With the signing of the Anti-Ballistic Missile (ABM) Treaty in 1972 banning nationwide ABM systems, the issue of ballistic missile defense (BMD) was relegated to a less prominent status. Beginning in March 1983, ballistic missile defense gained new prominence with the unveiling of the Strategic Defense Initiative (SDI). Throughout the next decade, the SDI program engendered significant debate with regard to its viability and cost.

The Problem

Despite a decade of research and an investment of \$30 billion, most experts inside and outside the Department of Defense agree that we are far from deploying a highly effective defense against a large-scale missile attack. Furthermore, as a result of the strategic arms reduction agreements recently negotiated with the former Soviet Union and the dissolution of that country, the principal threat against which such a system was originally designed has drastically declined.

In response to these developments, and because the Congress had consistently failed to fund the scale of SDI program that the executive branch proposed, the Bush Administration refocused SDI toward a more limited defense of the United States and its allies, called Global Protection Against Limited Strikes (GPALS). The Bush program called for spending an additional \$39 billion for ballistic missile defense in FY 1995-99 — an amount that would have constituted a significant portion of the modernization dollars in the DoD budget.

In his FY 1994 defense budget request, President Clinton decided to scale back investments in missile defenses from \$6.3 billion under the Bush plan to \$3.8 billion. This reduction reflected this Administration's skepticism about the need for early deployment of a

national missile defense and a desire both to reorient the program toward theater missile defense and to fund overall missile defense research and development at a sustainable level.¹

The Bottom-Up Review thus examined U.S. missile defense requirements from a perspective of identifying options that could meet future needs at an affordable cost.

The Threat

There are three general categories of long-range missile threats to the United States: deliberate attacks by the former Soviet Union or China, accidental or unauthorized launches from those countries, and the emergence of new long-range missile threats from potentially hostile nations.

If Ukraine, Belarus, and Kazakhstan ratify and implement START I and join the Nuclear Nonproliferation Treaty as nonnuclear states, Russia will be the only country of the former Soviet Union possessing missiles capable of reaching the United States. Once START II is implemented, Russian strategic nuclear forces will be much smaller than they are today and strategic modernization is expected to proceed at a slower pace. While China also has a few nuclear missiles that could reach the United States, its strategic nuclear force is quite small now, and it is likely to grow slowly in both size and capability over the next decade. A deliberate attack by Russia or China on the United States would appear to be highly unlikely.

Accidental or unauthorized launches of Chinese or former Soviet nuclear missiles are also considered

¹ The term *theater missile defense* (TMD) refers to defenses against shorter-range theater and tactical missiles that might be used against forward-deployed U.S. forces or U.S. allies. A *national missile defense* (NMD), by contrast, would defend against long-range strategic missiles that might be used to attack the United States directly.

unlikely. Both countries appear to maintain effective nuclear weapon control procedures to preclude such an event.

Finally, while no other potentially hostile nation currently possesses the capability to threaten the United States with ballistic missiles (and probably none will acquire such a capability for the next several years), the possibility of a limited ballistic missile threat from the Third World sometime in the first decade of the next century cannot be excluded.

However, a different threat of particular concern in the post-Cold War period is the proliferation of shorter-range ballistic and cruise missiles armed with nuclear, biological, or chemical warheads. Ballistic and cruise missile deployments are expected to increase worldwide, despite stepped-up efforts to inhibit their proliferation, and several countries other than the acknowledged nuclear states are developing both nuclear weapons and ballistic missiles. Similarly, a number of countries have or are developing chemical or biological weapons that could be delivered by ballistic or cruise missiles.

Treaty Compliance

The ABM treaty, as amended in 1974, permits a single missile defense site equipped with ground-based tracking and guidance radars and up to 100 fixed, land-based interceptor missiles. The treaty prohibits mobile land-based, air-based, sea-based, and space-based ABM systems or components. The Bottom-Up Review considered program options that are treaty compliant as well as options that would require relief.

One option would be to deploy an ABM system that could provide a limited defense of the continental United States against a small-scale missile attack. Such a system, deployed at a single site in Grand Forks, North Dakota, would consist of a ground-based radar (GBR), 100 ground-based interceptors (GBIs), and upgrades to our existing early-warning radar system. While such a system would provide nationwide coverage against some types of attacks, levels of protection for substantial areas of the eastern and western United

States would be inadequate in the event of other attacks.

Other options involve multiple sites, additional interceptor missiles, and/or reliance on missile tracking information from space-based sensors. These options are being examined in the context of a Presidential review of our BMD program and the ABM treaty. They raise ABM treaty compliance issues that must be resolved within the government and within the framework of our dialogue with Russia and perhaps other countries of the former Soviet Union before development or deployment could proceed. The present political instability in Russia could make it very difficult to negotiate such modifications to the ABM treaty for the foreseeable future.

Core Theater Missile Defense Program

To meet the growing threat from shorter-range theater ballistic and cruise missiles, the Bottom-Up Review considered a range of theater missile defense options. All options include a "core" set of TMD systems consisting of an enhanced version of the existing land-based Patriot air and missile defense system, called Patriot Advanced Capability, Level-3 (PAC-3); the sea-based Aegis/Standard Missile Block IVA; and the land-based Theater High-Altitude Area Defense (THAAD) missile system (see Figure 9).

Patriot Advanced Capability Level - 3. Our current ability to intercept shorter-range ballistic missiles is limited to the Patriot PAC-2 missile, which was used with partial success against modified Iraqi Scud missiles during the Gulf War. The immediacy of the tactical ballistic missile threat argues strongly for rapid deployment of improved theater missile defenses, such as PAC-3, that provide greater lethality and range, and are more capable against longer-range threats. PAC-3 would include an improved radar and either an upgraded Patriot missile or a new "hit-to-kill" interceptor missile.

The Aegis/Standard Missile Block IVA. The Navy currently deploys many cruisers and a growing number of destroyers equipped with Aegis radars and

Standard missiles for air defense operations. The Block IVA program would capitalize on this existing infrastructure by fielding upgraded Standard missiles and a modified Aegis radar to provide a sea-based TMD capability and improved performance against antiship cruise missiles. In some circumstances, a naval TMD capability could be in place in the vicinity of a regional conflict, providing protection for land-based targets before hostilities break out or before land-based defenses can be transported to the theater.

Theater High-Altitude Area Defense System.

While modifications of existing systems can deal with most existing ballistic and cruise missile threats, the THAAD system is included in the core TMD program because additional capabilities will be needed to counter more advanced threats anticipated in the future. THAAD would defeat longer-range ballistic missiles, thereby minimizing the effects of weapons of mass destruction on the ground, and would also defend a larger area. When combined with either PAC-3 or the Standard Block IVA missile as a lower defensive tier,

THAAD would anchor a highly effective layered defense of critical assets.

Brilliant Eyes. Brilliant Eyes (BE) missile tracking satellites offer the potential for significantly enhancing the capabilities of the core theater missile defense effort. Brilliant Eyes satellites would provide an autonomous missile surveillance and tracking capability for a number of regions of interest, or if cued by global surveillance satellites, they could observe missiles soon after launch. The unique contribution of BE is high-precision midcourse tracking, which allows interceptors to be launched when incoming missiles are still beyond the range of land- or sea-based radars. This means that intercept ranges would increase, particularly for long-range, wide-area defensive systems such as THAAD.

Brilliant Eyes missile tracking data could also be used for interceptor guidance updates, further increasing the defended area and offering a hedge against radar countermeasures or the loss of a radar. In

Theater Missile Defense

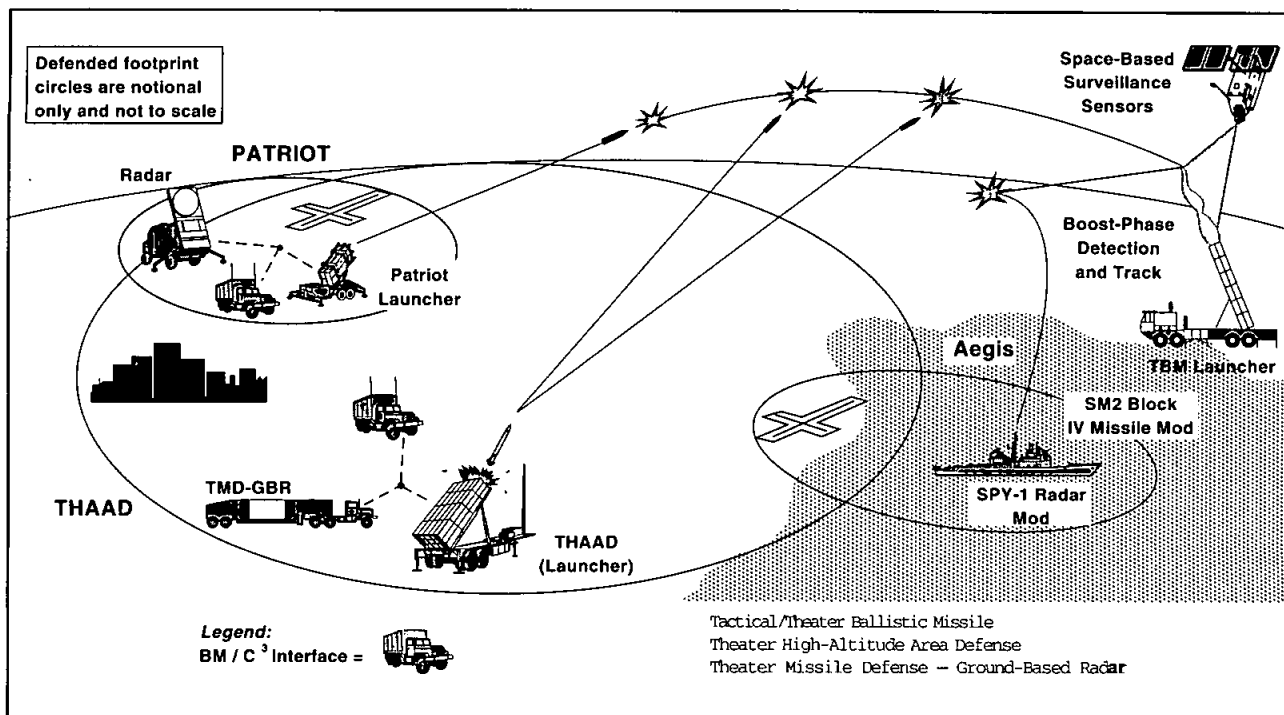


Figure 9

peacetime, the BE constellation could help collect intelligence data on emerging threats. A DoD working group is examining whether Brilliant Eyes might also have a role to play in fulfilling future strategic early-warning and surveillance requirements.

Additional TMD Programs

In addition to the core TMD program and Brilliant Eyes, the Bottom-Up Review examined the advantages and costs of proceeding with several other proposed TMD programs: a sea-based upper-tier program, the Army's Corps Surface-to-Air Missile (SAM) system, and ascent/boost-phase intercept capabilities.

Sea-Based Upper Tier. All sea-based concepts for higher-altitude missile ("upper tier") intercepts take advantage of the Vertical Launch System on naval combatants and offer very long-range intercept potential when supported by BE or some other over-the-horizon sensor. This is particularly true for concepts using an upper-stage intercept element based on Lightweight Exoatmospheric Projectile (LEAP) technology and carried by the Standard missile. These sea-based systems could provide extensive area protection.

Corps SAM. This new mobile air and missile defense system would protect Army or Marine maneuver forces against short-range ballistic missiles and advanced cruise missiles fired from any direction. In addition, Corps SAM would be more transportable, more mobile, and have more on-line missiles per battery than the Patriot PAC-3.

Ascent/Boost-Phase Intercept. We will also investigate the feasibility of defensive systems having earlier intercept capabilities so that enemy missiles could be destroyed while they are still ascending. This would be a joint Air Force-Ballistic Missile Defense Organization (BMDO) program.

TMD Options

Four TMD options that build on the core program were examined. The options differ with respect to the

ways in which they supplement the core program and the time period in which the additional programs they provide would proceed through the acquisition process.

Option 1: Core TMD Program Plus Sea-Based Upper Tier and Corps SAM. This option, consisting of the core TMD program (PAC-3, THAAD, Standard Missile Block IVA) plus both the Sea-Based Upper Tier and Corps SAM systems, was the Bush TMD program. Proceeding with all five of these major system acquisitions would require about \$14 billion in investment funding for TMD during FY 1995-99. This option would create a significant bow-wave problem in the period beyond the FYDP, due to the large number of systems acquired during the initial years.

Option 2: Core Program Plus Sea-Based Upper Tier. This option consists of the core TMD program plus the Sea-Based Upper Tier system and a less vigorous development effort for Corps SAM. Under this option, Corps SAM would not enter the demonstration/validation phase any earlier than FY 1998. About \$12 billion would be needed in FY 1995-99 to implement the option. Post-FYDP acquisition funding would increase modestly.

Option 3: Core Program and Technology Demonstration. This option would pursue the core TMD acquisition program plus a technology demonstration only for the Sea-Based Upper Tier. Depending on the success of the technology demonstration effort, the Sea-Based Upper Tier system could transition to an acquisition program in FY 1998. Alternatively, development of Corps SAM could be started at that time. The estimated FY 1995-99 cost of this option is about \$10 billion; no significant post-FYDP funding bow wave is projected.

Option 4: Core TMD program. This option consists of the core TMD program only, delaying the start of any additional acquisition program — Sea-Based Upper Tier or Corps SAM — until at least FY 1998. This option would require about \$9 billion in funding in FY 1995-99 and about the same level of expenditure in FY 2000-06.

National Missile Defense Options

In evaluating options for national missile defense, three main factors were considered: technological promise, responsiveness to the projected threat, and ABM treaty compliance. Various NMD architectures were examined, consisting of the Ground-Based Radar and the Ground-Based Interceptor, with and without Brilliant Eyes. In addition, four different development approaches were analyzed.

Option 1: Standard Acquisition Program. This option would cost approximately \$10 billion over the FYDP period. If started now, it could provide an initial operational capability by the year 2004. Pursuit of this type of NMD program might be appropriate if the likelihood that a potential adversary (e.g., Libya, Iraq, or North Korea) might acquire an intercontinental ballistic missile (ICBM) capability by 2004 was substantially higher than it currently appears to be.

Option 2: Systems Technology Demonstration Approach. This option would cost about \$7 billion over the FYDP period. It envisions conducting enough development to ensure that the United States — given the knowledge of an emerging threat and the decision to start development — would have the capability to deploy a prototype ground-based system within about five years and production-quality hardware in about eight years. Although this approach could save \$3 billion to \$4 billion during FY 1995-99 relative to the first option, the total expenditure for a single, fully configured site (with production equipment) would be considerably more than if a standard acquisition program were started now. The specific option considered would permit a prototype deployment by 2003 (given a decision in 1999 to do so), with the first production hardware available in 2007.

Option 3: NMD Technology Program Plus Brilliant Eyes. This option would cost \$3 billion over the FYDP years, including about \$200 million annually for acquisition of Brilliant Eyes. It preserves a capability in the key technologies being investigated for NMD. Under this approach, it would take 10 to 15 years to deploy an operationally effective system from

the time a decision was made to do so. Cost savings relative to Option 1 would be \$7 billion to \$8 billion during FY 1995-99. The NMD technology alternative would, in conjunction with TMD activities, preserve an adequate industrial base in critical technology areas.

Option 4: NMD Technology Program Without Brilliant Eyes Acquisition. This option would cost about \$2 billion over the FYDP period. It is similar to the third option, except that a Brilliant Eyes acquisition program is not included. Option 4 would provide cost savings (relative to Option 1) of \$8 billion to \$9 billion during the FYDP years.

The Decision

In considering the proper approach to ballistic missile defense, the Bottom-Up Review examined a range of program options that emphasized theater missile defense, national missile defense, both TMD and NMD, or neither. The options ranged in cost from \$15 billion to \$25 billion, although each would generate significant savings compared with the Bush Administration's planned \$39 billion expenditure on ballistic missile defense during FY 1995-99.

Given the nature of the present and projected threat from ballistic and cruise missiles armed with weapons of mass destruction, a decision was made to emphasize protection of forward-deployed U.S. forces in the near term and to proceed with a more robust TMD program, combined with a more limited NMD technology program.

On TMD, we have decided to pursue Option 2 — a TMD program that includes PAC-3, the Standard Missile Block IVA, THAAD, and the Sea-Based Upper Tier system, all funded as major acquisitions in FY 1995-99. We will also examine the feasibility of ascent/boost-phase intercept capabilities. Development of PAC-3 will allow major work on Corps SAM to be deferred until FY 1998.

On NMD, we will fund a technology program at approximately \$600 million per year as a hedge against

the emergence of a greater long-range missile threat than is now projected. This program, in conjunction with the recommended TMD option, will preserve an adequate technology base in critical ballistic missile defense areas.

Specifically, Brilliant Eyes, or an equally effective alternative, would continue as a technology program; ground-based radar technology would advance through the GBR program for THAAD; and existing interceptor technology efforts, including THAAD and LEAP (if selected for the Sea-Based Upper-Tier system), would provide a development path to a ground-based interceptor for NMD.

Overall, the ballistic missile defense program will require an investment of approximately \$18 billion over the FYDP period, with about two-thirds (or \$12 billion) of the total expenditure directed toward TMD. This will provide a savings of about \$21 billion compared with the previous Administration's BMD program.

We believe the recommended overall BMD program — a robust TMD effort plus a limited NMD technology program — is the best and most cost-effective approach. It is both consistent with our current understanding of the likelihood of a limited missile attack against the United States and provides the capabilities needed to defeat the more pressing theater ballistic and cruise missile threats.

SECTION V: MODERNIZATION

AIRCRAFT CARRIERS

New aircraft carrier procurement represents a significant investment for the Navy. In evaluating future requirements, the Bottom-Up Review assessed aircraft carrier modernization needs in light of the new international security environment. Modernization options — both new procurement and overhaul of existing carriers — were examined in the context of alternative carrier force levels. The review focused on procurement of CVN-76, the next new carrier the Navy has requested.

The review also examined the potential budgetary savings and other implications of consolidating nuclear aircraft carrier and submarine construction at a single shipyard. This issue was considered because reduced procurement rates for both submarines and carriers in the post-Cold War era have resulted in excess production capacity at shipyards.

Current Capabilities and Programs

With the decommissioning of the *Forrestal* (CV-59) and the *Ranger* (CV-61) at the end of FY 1993, the Navy will have 13 aircraft carriers, of which six are conventionally-powered and seven nuclear-powered. The nuclear-powered carriers include the *Enterprise* (CVN-65) and six ships of the Nimitz class.

The planned decommissioning of the *Saratoga* (CV-60) in the near future will result in a 12-carrier force, with no dedicated training platform. Currently, two Nimitz-class carriers, CVN-74 and 75, are under construction, and are planned for delivery by the end of the decade. To maintain a constant force level as new Nimitz-class carriers are introduced, the Navy plans to decommission some additional conventional carriers that still have service life remaining.

The Bush Administration planned to retain 13 carriers as part of the Base Force, 12 of which would be

available for routine deployments, with the remaining ship serving as a dedicated training carrier. A contract for construction of the ninth Nimitz-class carrier, CVN-76, was to be awarded in FY 1995. Advance procurement funds for the nuclear propulsion plant for CVN-76 were authorized in FY 1993. The Bush FYDP also contained advance procurement funding in FY 1999 for CVN-77.

Options Examined

Nine options were examined — three variations in aircraft carrier modernization to support three different carrier force levels. Operating conventional carriers to their planned service lives or beyond, consistent with past practice, was considered in order to determine whether our conventional carriers could be kept in service longer than the Navy currently plans. As is discussed in more detail below, retaining these ships for longer periods could help to limit a potential procurement "bow wave" beyond the turn of the century at higher force levels.

The three modernization options evaluated were:

Option 1 would retain the current modernization program. It would procure CVN-76 in FY 1995 and provide advance procurement funds for CVN-77 in FY 1999, at a total acquisition cost of about \$5 billion. Overhaul of the *Nimitz* (CVN-68) would also be completed, as scheduled, in FY 1998.

Option 2 would defer CVN-76 construction beyond the FYDP period, to FY 2000. It would extend the operational life of some existing carriers to their estimated service life or slightly beyond. Advance procurement funding for future CVNs would be deferred beyond FY 1999. The *Nimitz* overhaul would be completed on schedule.

Option 3 would procure CVN-76 in FY 1995, provide advance procurement funding for CVN-77 in FY 1999, but retire the *Nimitz* in FY 1998 in lieu of overhauling it.

Initially, a fourth modernization option was also considered. It would have retained the *America* (CV-66) beyond its planned decommissioning in FY 1996 and operated the *John F. Kennedy* (CV-67) for as much as eight years beyond that ship's current estimated service life. These steps would have been taken to compensate for delaying the construction of CVN-76. This modernization strategy was rejected because the technical difficulties involved would make a service life extension program (SLEP) for the *America* prohibitively expensive and further extending the *Kennedy's* service life would require an additional, unplanned and costly overhaul. Another factor in

rejecting this option was the training and maintenance efficiency to be gained by transitioning to an all-nuclear-powered carrier force.

Three different force levels were considered in the evaluation of modernization options. The force alternatives included 10, 11, and 12 carriers, respectively. Variations in overall force levels were an important factor in assessing modernization costs and determining the industrial base implications of alternative modernization strategies.

Evaluation of Options

Five factors were weighed in evaluating each modernization option: (1) effectiveness in achieving warfighting and overseas presence requirements; (2) effects on the affordability of future carriers (i.e., the

Carrier Force Levels, Warfighting Risk, and Overseas Presence

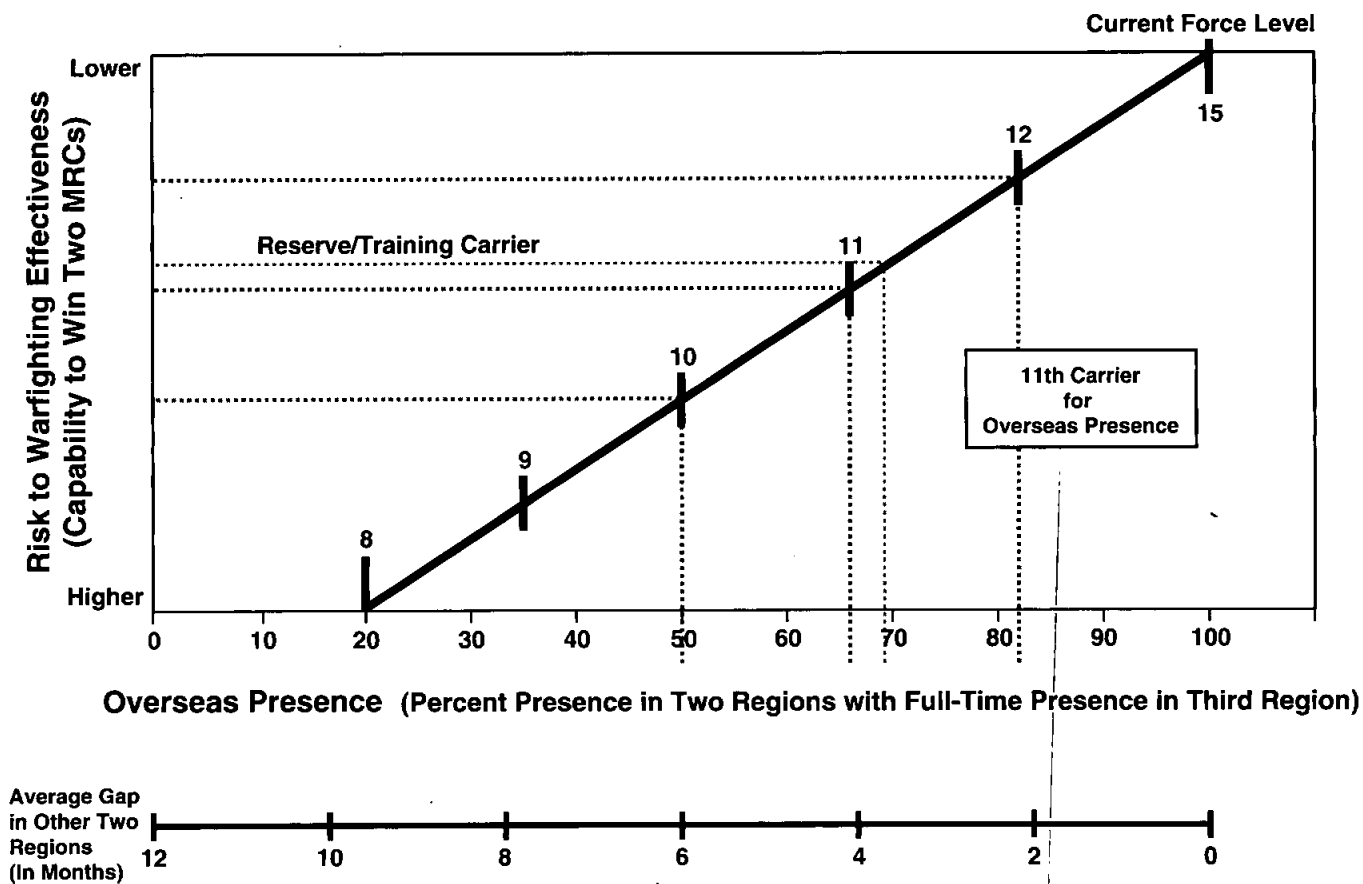


Figure 10

procurement bow wave); (3) the number of useful service years forgone by decommissioning conventional carriers early to maintain force levels constant as new nuclear carriers are delivered; (4) costs, including acquisition and nuclear refueling expenditures in the FYDP years and beyond; and (5) impact on the aircraft carrier industrial base.

Warfighting Effectiveness. First, the relationship of carrier force levels to warfighting capability in regional contingencies was reviewed. Figure 10 illustrates the increased risk to the successful accomplishment of warfighting tasks as carrier force levels are reduced. However, the analysis confirmed that a force of 10 carriers would be adequate to fight two nearly simultaneous MRCs. That assessment was based on many factors, from potential sortie generation capability and arrival periods on station to the independence of carrier-based aviation and its criticality if land-based air elements are delayed in arriving in the theater.

Overseas Presence Effectiveness. With regard to overseas presence, the analysis compared recent experience, with a total force of 14 to 15 carriers, to the peacetime overseas presence implications of a force with 10, 11, or 12 carriers.

As shown in Figure 10, a 15-carrier force could provide virtually full-time presence in three key regions where presence operations are important — the Mediterranean Sea, the western Pacific, and the Indian Ocean/Persian Gulf. A 12-carrier force could maintain a full-time presence in one region, with a minimum of two-month “gaps” in coverage in the other two. If the force were reduced to 11 or 10 carriers, the gap in regional coverage would increase. At a 10-carrier level, the United States could maintain a continuous presence in one region, but gaps in the other two would be as long as six months.

One way of reducing the effect on overseas presence of moving to a smaller carrier force would be to implement a “tether” policy for carriers. Under such a policy, carriers could operate within large areas yet be available to steam to specific staging areas within several days.

Along with implementing a tether policy, other ways of dealing with presence gaps were examined — for example, using ships other than carriers to provide overseas presence or homeporting additional carriers overseas, as is currently done with the *Independence* (CV-62) in Japan. Amphibious ready groups also could substitute for carrier battle groups in some, but not all, peacetime presence missions. Additional overseas carrier homeporting remains another potential option, but significant front-end costs, time, and diplomatic effort would be required to implement this concept successfully.

The interaction between aircraft carrier force levels and naval air wing requirements also was examined, in order to determine the most prudent and effective way to reduce the number of active and reserve air wings as carrier force levels decline. Because at least one aircraft carrier is usually in overhaul and thus not readily deployable, the Navy maintains one fewer air wing than it has carriers. Currently, the Navy has 11 active air wings and two reserve wings.

Also studied was a concept developed by the Navy calling for retention of a dedicated reserve/training carrier. This platform would be manned by a mostly active-duty crew and would be used both by Navy and Marine active and reserve pilots and crews during their initial and refresher carrier training. The carrier could deploy forward for limited periods either with an integrated active/reserve wing or with an active wing whose carrier was in long-term maintenance. This innovative new concept could improve overall reserve readiness, help fill gaps in overseas naval presence, and provide a rapidly deployable carrier for use in crises or conflicts.

Affordability. Deferring construction of CVN-76 to FY 2000 could result in an affordability problem — a procurement bow wave — for carriers constructed in succeeding years. For example, at a 12-carrier force level, slipping CVN-76 construction to FY 2000 would require that four new nuclear carriers be funded during FY 2000-08 if conventional carriers were to be replaced as they reached the end of their service lives. The option of retiring *Nimitz* early in order to save funds over the FYDP period was eliminated at force

levels of 11 or 12 carriers, because it, too, would have worsened the procurement bow-wave problem associated with carrier construction beyond FY 2000.

Carrier Useful Life Forgone. Conventional carriers are built to last approximately 30 years. Through the Service Life Extension Program, the useful life of these ships can be extended another 15 years. Because additional nuclear carriers are already funded and under construction, one of the implications of moving to a smaller force level is that conventional carriers would have to be retired several years prior to the end of their service lives in order to make way for the new carriers. The Bottom-Up Review compared the useful service life forgone of three conventional carriers — *Kitty Hawk* (CV-63), *Constellation* (CV-64), and *Kennedy* (CV-67) — for each of the force level and modernization options considered. Under all three force levels, building CVN-76 in FY 1995 would mean forgoing some useful life of these existing carriers.

Cost Analysis. Delaying funding for CVN-76 to FY 2000 (and deferring advance procurement funding for CVN-77) would save approximately \$5 billion in aircraft carrier acquisition costs during the FYDP period. However, the delay would add about \$2.1 billion to the total cost of CVN-76's construction, including the cost of reconstituting the shipbuilder's production facilities, retraining the work force, requalifying vendors, overhead escalation, and direct construction costs. The annual cost to procure, operate, and maintain a 10-carrier force, averaged out over 35 years, is approximately \$3.6 billion. An 11-carrier force costs about 10 percent more, or \$4 billion. A 12-carrier force costs about \$4.2 billion to \$4.3 billion.

Industrial Base Assessment. Also assessed was the aircraft carrier industrial base, focusing on both the shipbuilder and the firms that provide the nuclear reactor and other key nonnuclear components for the ships. Results of the submarine industrial base study, completed as part of the attack submarine portion of the



The aircraft carrier Abraham Lincoln and its battle group.

Bottom-Up Review, were considered because the studies focused on the same shipbuilder and suppliers (or vendors) that manufacture nuclear propulsion systems.

It was concluded that delaying CVN-76 construction until FY 2000 would be a high risk for the shipbuilder. This is because existing contracts will be completed in the mid-1990s and a lack of subsequent orders would threaten the shipbuilder's viability by 1997 without additional work. This risk could be mitigated if certain actions were taken ahead of time. One option would be to do the necessary pre-shutdown planning to minimize the effort and cost that would be entailed in restarting carrier production — a "smart shutdown" of certain carrier construction capabilities. Another option would avoid a shutdown altogether by rescheduling delivery of carriers under contract, overhauls, and other work in order to help keep the facility open and functioning and to maintain essential construction capabilities.

Delaying CVN-76 construction would have less impact on the nuclear vendors, assuming that work proceeds in FY 1996 on components for a new nuclear attack submarine. The analysis indicated, however, that suppliers of nonnuclear and carrier-specific equipment could be affected by a delay in CVN-76 construction.

Consolidating Nuclear Aircraft Carrier and Submarine Construction

Currently, Newport News Shipbuilding Company, in Newport News, Virginia, builds both nuclear aircraft carriers and nuclear attack submarines. General Dynamics' Electric Boat Division in Groton, Connecticut, builds nuclear-powered ballistic missile and attack submarines. Because Newport News is technically capable of building nuclear carriers and submarines, the implications of consolidating construction of these ships at that facility were assessed.

Consolidating carrier and submarine construction at Newport News would save about \$1.8 billion during

the FYDP period. However, much of these savings are derived from not funding SSN-23, the third Seawolf submarine, which would provide a "bridge" in production to keep the Groton, Connecticut, shipyard viable and preserve the industrial base needed to produce a new attack submarine. Newport News would not need such a "bridge" submarine production contract, even if CVN-76 were delayed, if all future carrier and other submarine construction were consolidated there. This issue is discussed in more detail in the Attack Submarine section of this report.

The Decision

Construction of CVN-76. We have decided to proceed with construction of CVN-76 beginning in FY 1995. This decision preserves some flexibility on the ultimate size of the carrier force, protects the carrier industrial base, avoids the cost increase associated with delaying CVN-76's construction, and avoids a major carrier procurement bow wave beyond FY 1999.

Advance Procurement for CVN-77. We will defer long-lead funding for CVN-77 until after FY 1999, pending completion of a study evaluating alternative aircraft carrier concepts for the 21st century. This latter study will examine a full range of sea-based platforms to project air power and meet our military needs in the period 2020 and beyond. Platforms to be assessed will include Nimitz-sized carriers, both nuclear and conventionally-powered; smaller-sized carriers; larger-sized carriers; and "floating islands."

Consolidating Nuclear Aircraft Carrier and Submarine Construction. Because we remain concerned about the resulting loss of competition as well as other long-term defense industrial base and national security implications that would result from having only one provider for two key classes of naval vessels, we will not consolidate all carrier and submarine construction. However, we will continue to monitor this issue closely while examining other ways to balance industrial base considerations with reduced shipbuilding requirements.

Aircraft Carrier Force Structure and the Reserve Carrier. In order to reduce our overall force structure while still meeting our warfighting and overseas presence needs, we will maintain a naval force structure organized around 11 active aircraft carriers, 10 Navy active air wings, and one composite

Navy-Marine Corps reserve air wing. We also plan to establish a reserve/training carrier to provide Navy and Marine active and reserve pilots their initial and refresher carrier training, and for occasional forward operations to cover overseas presence requirements.

SECTION V: MODERNIZATION

ATTACK SUBMARINES

Nuclear-powered attack submarines are a valuable and flexible national asset — combining the elements of stealth, endurance, agility, and firepower on a single, multimission-capable platform. Attack submarines' stealth, combined with their advanced sensors and weaponry, means they can detect and attack adversaries or conduct land attacks with cruise missiles without first revealing their presence. Stealth also means covertness — attack submarines can routinely collect intelligence on enemy forces and movements without revealing that U.S. forces are present. Nuclear propulsion provides submarines with virtually unlimited endurance and the ability to operate at very high speeds for long periods of time. Finally, the diverse firepower of attack submarines gives them the ability to use not only traditional submarine weapons, such as torpedoes and mines, but also antiship and land-attack cruise missiles.

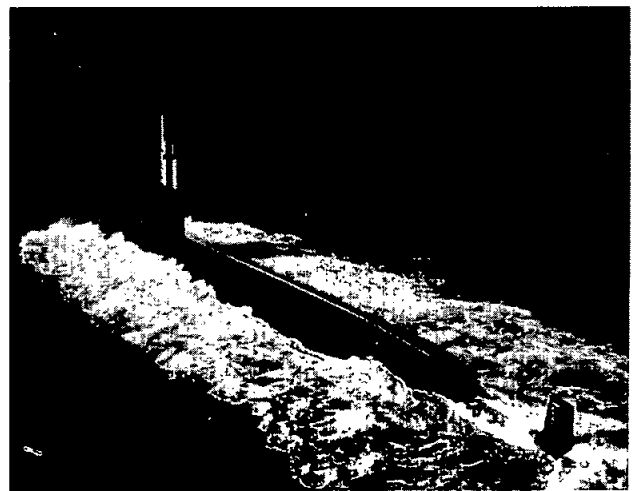
Attack submarine missions include regional sea denial, task force support, precision strikes, forward presence, surveillance, and special operations. Whether serving as key elements of joint task forces or naval battle groups, or deployed as independent units, attack submarines play an important role in U.S. defense operations.

Current Attack Submarine Force Levels and Programs

Today, the Navy has nearly 90 nuclear-powered attack submarines. These include two 594-class submarines, 31 Sturgeon-class (SSN-637) submarines, 39 Los Angeles-class (SSN-688) submarines, and 14 improved Los Angeles-class (SSN-688I) submarines. All of the 594- and 637-class boats will be decommissioned by FY 1999, as the Navy trims its force to approximately 55 attack submarines.

Currently, both Newport News Shipyard in Newport News, Virginia, and Electric Boat Shipyard in Groton, Connecticut, build nuclear-powered attack submarines. Nine improved Los Angeles-class sub-

marines are under construction, three at Electric Boat Shipyard and six at Newport News. The Navy is also building two new Seawolf-class (SSN-21) attack submarines at General Dynamics' Electric Boat Shipyard. These two subs will be completed in 1996 and 1997, respectively.



The USS Alexandria, an improved version of the Los Angeles-class (SNN-688) attack submarine.

The Seawolf, originally slated as the replacement for Los Angeles-class submarines, was designed to counter increasingly more capable Soviet submarines. With the demise of the Soviet Union and the reduced threat of global war, Seawolf production has been sharply curtailed.

At the same time, the Navy has initiated development of a New Attack Submarine (NAS) — designed to be a more cost-effective replacement for the Los Angeles class. Under current plans, acquisition funding for the first NAS would be provided in the FY 1998 budget, with construction commencing in FY 1999.

The Threat

During the Cold War, attack submarines were critical to our ability to counter the Soviet navy, primarily the threat posed by Soviet attack submarines to our

surface combatants and merchant ships, which were vital to our ability to reinforce Europe in the event of a NATO-Warsaw Pact conflict. Our attack submarine force was also our principal means of holding Soviet ballistic missile submarines at risk.

Since the end of the Cold War and the dissolution of the Soviet Union, the restructured Russian submarine force has dramatically reduced its operations at sea. However, Russia continues to construct and deploy modern, high-quality attack submarines with capabilities that approach, and in some cases exceed, our own. Russia has also begun exporting some of its modern submarines abroad, including most recently selling three Kilo-class diesel-powered submarines to Iran.

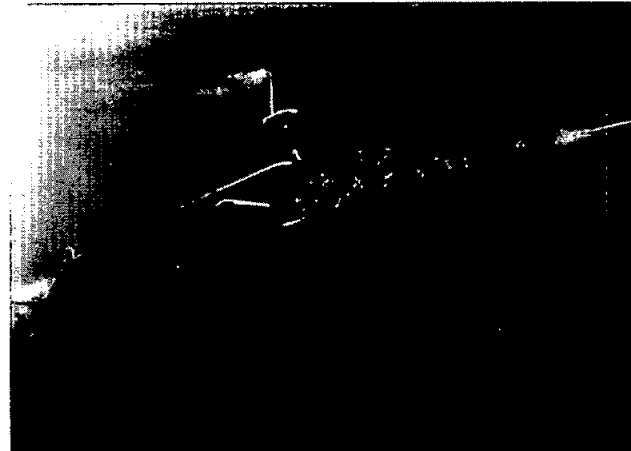
The Problem

The Bottom-Up Review addressed several issues with respect to the future size and shape of the U.S. attack submarine force.

First was the question of how many attack submarines are needed in the post-Cold War era. Ninety attack submarines are more than we need to fulfill the warfighting and overseas presence requirements of our new defense strategy. During the Bottom-Up Review, future requirements for both these missions were analyzed.

Second was the need to devise a cost-effective approach to modernizing the force as the overall number of attack submarines declines.

The third issue, linked to the first two, was the need to preserve our long-term ability to build attack submarines. This problem arises from the fact that the reduced requirement for new submarines as the force is drawn down has created a potential "gap" in new submarine construction that threatens the viability of the submarine production base. There will be a seven-year interval between the time the second Seawolf submarine was authorized (in 1991) and the start of construction of the first NAS, slated for 1998. Ongoing production to fill previous orders for SSN-688,



An artist's concept of the nuclear-powered attack submarine Seawolf (SSN-21)

SSN-21, and Trident submarines will be completed by 1997. When these submarines are completed, the Groton, Connecticut, shipyard will be without any additional submarine production work.

Force Level Options Examined

The elimination of the global threat formerly represented by the Soviet navy has created an opportunity to reduce the U.S. attack submarine force while reorienting it to reflect the new defense strategy and projected forward presence requirements.

Three different force levels were considered in the Bottom-Up Review. The options took into account the requirements of regional conflicts and presence operations, manpower and training needs, the present capabilities of U.S. attack submarines against foreign submarines, overhaul and refueling schedules, force age, and the attack submarine retirement profile. Detailed analyses of the options were performed by the Joint Staff with input from the Navy and OSD.

- **Option 1** would retain a force of 55 attack submarines. The analysis indicated that a force of this size could meet all wartime requirements for regional conflicts, as well as fulfill peacetime needs.
- **Option 2** would reduce the number of attack submarines to 45. This force also was found to be

- **Option 2** would reduce the number of attack submarines to 45. This force also was found to be capable of fulfilling warfighting requirements, but it imposed a greater degree of risk to peacetime missions than the larger Option 1 force.
- **Option 3** would reduce the attack submarine force by the greatest margin — to a level of 30 submarines. The analysis concluded that a force of this size would be unable to meet either warfighting or peacetime operational requirements.

Industrial Base Considerations

Several options were considered as a means of avoiding the potential consequences of a gap in submarine construction. Two alternatives emerged as the leading candidates. The first took steps to effect a “smart” shutdown of nuclear submarine construction at Newport News, with an eye to preserving the capability to resume production in the future, when circumstances warrant. A “smart shutdown” approach makes more sense at Newport News, since much of its skilled work force would continue construction of nuclear aircraft carriers. Thus, in effect, this option would end submarine production at the Groton, Connecticut, shipyard. It would require approximately \$625 million in shutdown/reconstitution-related costs.

The second option provided for construction of a “bridge” submarine to avoid the adverse consequences of attempting to shut down a nuclear-certified shipyard and then having to reopen it at a later date. This option was more expensive than the first, costing about \$1.8 billion, but was judged to be the better industrial practice and had the added benefit of providing the nation with a third state-of-the-art Seawolf attack sub-

marine at a cost of only \$1.2 billion more than the first option, which provided no third Seawolf.²

The Decision

The Bottom-Up Review concluded that, in response to the changing threat environment, the Navy should reorient its submarine force to focus on regional conflicts and presence operations, keeping in mind the increasing capabilities of foreign, primarily Russian, submarines. Specifically, the review determined that:

- A force of 45 to 55 attack submarines is needed to meet the requirements of our defense strategy, including both regional conflicts and peacetime presence operations.
- Production of a third Seawolf attack submarine in FY 1995 or FY 1996, which will be directed to the Groton, Connecticut, shipyard, would “bridge” the projected gap in submarine production.
- The Navy should develop and build a new attack submarine as a more cost-effective follow-on to the Seawolf class, with construction beginning in FY 1998 or FY 1999 at the Groton, Connecticut, shipyard.

These last two decisions will maintain two nuclear-capable shipyards, thereby mitigating the risk to the industrial base.

² The \$1.8 billion includes \$1.5 billion in the FYDP period for the bridge submarine, as well as \$300 million for smart shutdown/reconstitution-related costs. It does not include some prior appropriations or sunk costs for SSN-23, which brings the total cost to \$2.4 billion.

SECTION V: MODERNIZATION

SPACE LAUNCH

Satellites are an essential element of America's military capability, as well as its economic security. These systems provide vital support to our forces in such areas as intelligence-gathering, surveillance, missile warning, communications, weather monitoring, and navigation. A robust space launch capability is integral to our ability to operate in space because it provides the means to place satellites into orbit.

Requirements for space launch are of two types: (1) performance — the ability to deliver a satellite (payload) reliably to a specific orbit, and (2) operational flexibility — the capability to perform rapid and adaptive payload integration, servicing, substitution, and launch. Today's launch systems meet the performance objective, albeit with less than desired reliability, but fall short of the operational flexibility goal.

The Bottom-Up Review evaluated the current and projected status of DoD's space launch capabilities, along with various options for future investments in launch vehicles and infrastructure. The review included an examination of U.S. military, civil, and commercial space launch needs; the international competitiveness of the U.S. commercial space launch industry; and the effect of various modernization options on the industrial base.

The Problem

As indicated in Figure 11, DoD maintains a fleet of expendable launch vehicles (ELVs) and also uses the space shuttle to place military satellites in orbit. The National Aeronautics and Space Administration (NASA) uses the shuttle as its primary launch vehicle, but also employs both DoD ELVs and commercial variants of these vehicles.

As a result of a 1970s decision to fly all DoD spacecraft on the NASA shuttle, DoD investments in space launch infrastructure and vehicle improvements

virtually halted. Expenditures in this area remained relatively dormant until 1986, when the Challenger accident revealed the consequences of such an "all eggs in one basket" approach. Since then, DoD has gradually lessened its reliance on the shuttle to launch defense payloads, while increasing its investments in maintaining and improving the outdated ELV fleet and aging launch infrastructure.

Currently, the main types of launch systems used by DoD are the Delta II (manufactured by McDonnell Douglas), the Atlas I and II (produced by General Dynamics), and the Titan II and IV (made by Martin Marietta). Over the next several decades, launch rates in support of military satellite requirements are expected to be fairly stable at 15-20 per year, spread among the existing Delta, Atlas, and Titan boosters. While we are currently able to place all military satellites into their required orbits with this fleet, maintaining this capability over the long term will require significant investments in both the existing vehicles and the associated launch infrastructure.

Today, U.S. military space launch capabilities are characterized by high cost and serious operational limitations as a result of (1) the need to sustain three separate launch teams (for the three booster types) and associated support equipment, (2) the aging and obsolescence of major ELV components, and (3) continued dependence on outdated launch vehicle production lines and manpower-intensive launch processes. As a result, the performance and flexibility of launch operations is inadequate and system responsiveness in crises or emergencies is limited. For example, the current launch systems do not provide any overlap in performance — individual satellites are tied to specific space launch systems. Thus, Global Positioning System (GPS) satellites must be launched on Delta boosters, Defense Satellite Communications System (DSCS) satellites on Atlas boosters, and Defense Support Program (DSP) satellites on Titan boosters.

Primary U.S. Space Launch Vehicles

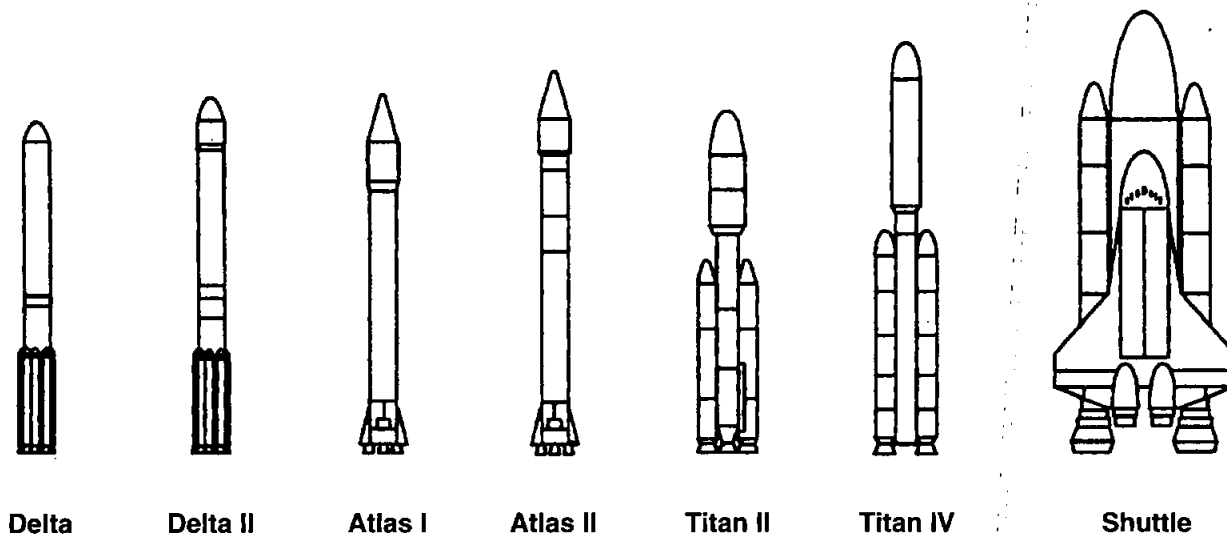


Figure 11

Another problem is the current production overcapacity in the American space launch industry. Because booster production is spread among three manufacturers, the industry is operating at less than 50 percent capacity, raising the unit cost of each booster. To date, there has been little effort to consolidate or reduce capacity, based on current and projected space-launch requirements. As DoD's demand for satellites continues to shrink, the ability to sustain three separate launch suppliers over the long term is in doubt.

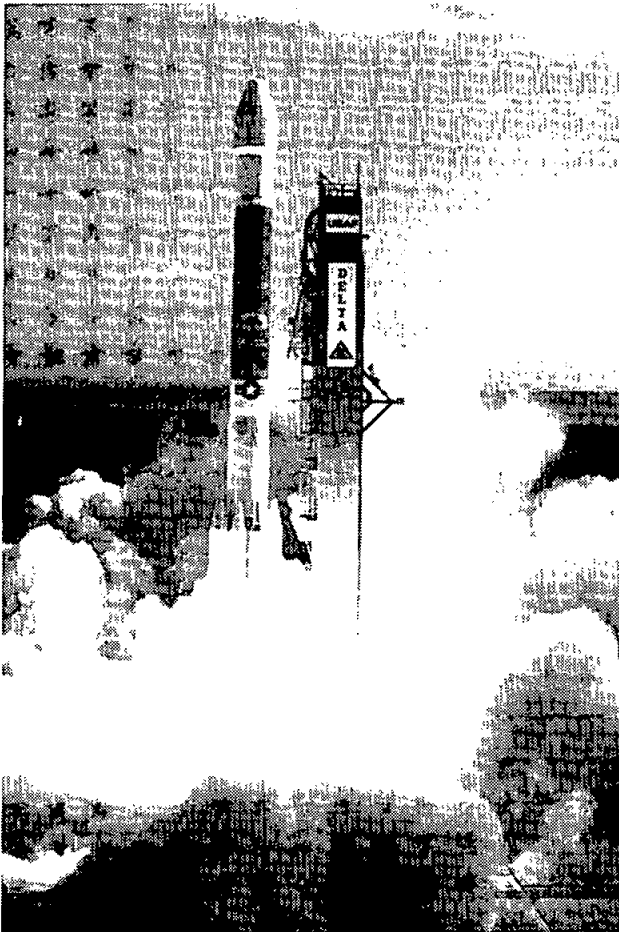
Finally, there is the issue of foreign competitors, which have begun to offer reliable and low-cost space launch systems. The U.S. civil and commercial sectors average about 25-30 satellite launches per year — enough, along with the DoD launches, to sustain the three U.S. manufacturers. However, about half of the commercial satellites and some of NASA's satellites now use foreign launch systems. There is also a growing market for commercial space launches outside the United States. If U.S. space launch systems cannot compete better in both the domestic and international markets, the U.S. share of these markets will continue to decline, DoD will account for a larger share of the demand for U.S. launch systems, and consequently, DoD's own space launch costs will increase.

If this should occur, DoD's current policy of "launch only on U.S. boosters" would become increasingly expensive.

Options Examined

To address these concerns, the Bottom-Up Review examined three different options for modernizing DoD's space launch capability: (1) extending the life of the current launch vehicle fleet to the year 2030; (2) developing a new family of expendable space launch vehicles to replace the current fleet starting in 2004; and (3) pursuing a technology-focused effort to develop a reusable launch vehicle that would effectively "leapfrog" the next generation of ELVs. In addition, more austere versions of Options 1 and 2 were developed that funded only "must do" improvements for the space launch and range infrastructure.

Option 1: Life-Extension Program for Current Systems. This option retains the three existing major launch systems (Delta, Atlas, and Titan IV) through the year 2030. It includes both robust (Option 1) and austere (Option 1A) variants for upgrading the space launch and range infrastructure, completing



Delta II launch from Cape Canaveral.

necessary maintenance and flexibility improvements, and funding cost-effective launch vehicle flexibility upgrades.

Option 2: New Launch System Development.

This option replaces the current ELV fleet with a new family of “space lifter” launch vehicles. It also provides for current vehicle and infrastructure upgrades prior to and during a period of transition, from 2004 through 2013. Robust (Option 2) and austere (Option 2A) upgrade options are included.

Option 3: “Leapfrog” Technology Launch Systems. This option funds the development of an advanced reusable launch system and provides for current vehicle and infrastructure upgrades prior to and during a transition period that starts in 2010, leading up to the introduction of the new launch system.

Evaluation of Options

Option 1 makes investments in launch vehicles and infrastructure. It meets all launch-vehicle performance needs. All upgrades are considered to be cost-effective, and are identified in four priority categories. The robust version of this option includes upgrades in all categories; Option 1A, the austere version, includes only the most necessary enhancements. However, even the more ambitious upgrades to current launch systems fail to satisfy the flexibility requirement or meet improved reliability goals. Consequently, this option offers little potential for reducing the high operating costs of the current systems, since we would still be maintaining three independent launch teams, with the associated inefficiencies, due to overcapacity in the industrial base. This option would have little impact on anticipated U.S. payload development efforts. It appears to be the least expensive option, over the FYDP period, of those examined.

Option 1 also offers little opportunity for cooperative activities with NASA; it offers minimal assistance to the U.S. launch vehicle industry to support commercial competitiveness; and it results in U.S. systems that could be more costly and less reliable than certain foreign alternatives for the foreseeable future.

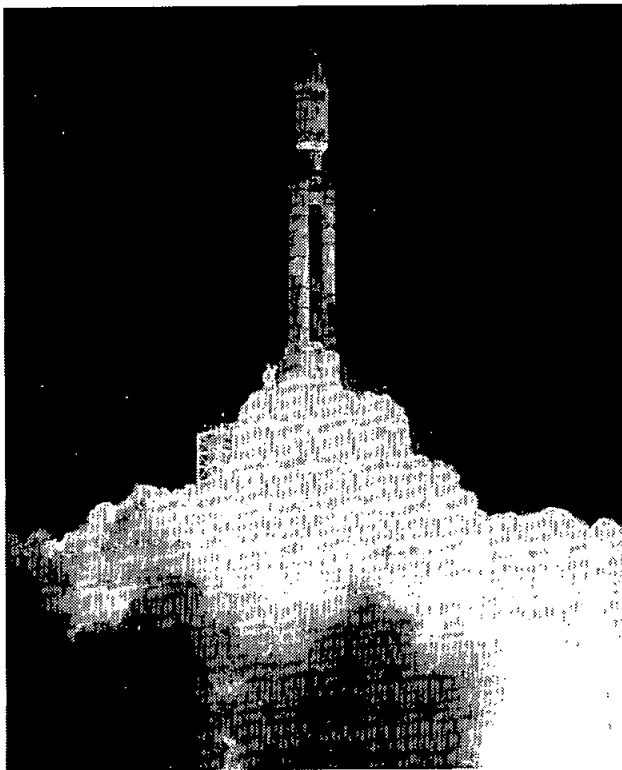
Option 2 also satisfies launch needs for current and projected U.S. military payloads. The design for this new generation of systems offers the potential for major improvements in both reliability and operational responsiveness, as well as significant reductions in operating costs. Significant investments in research and development would be required both during and beyond the FYDP years. The amount of these investments would depend on the particular design selected; since the new space lifter is still in the concept development phase, it is difficult to determine with accuracy its projected cost.

Because of the time needed to develop a new space lifter and integrate it with the variety of satellites it would carry, there would be a relatively long transition period, from 2004 to 2013, during which space

payloads would continue to be launched by current systems. Thus, in addition to the investment in the new space lifter, this option requires the same launch vehicle and infrastructure upgrades to existing systems as Option 1. An austere option, Option 2A, includes only the most necessary upgrades.

This option would be particularly effective in re-ordering the industrial base and reducing significantly the production and operating inefficiencies of current systems. There would also be greater opportunity for technical and fiscal cooperation with NASA in the development, production, and operations phases. Moreover, this option would improve the international competitiveness of the U.S. commercial launch industry.

Option 2 also offers the opportunity to expand cooperative efforts with Russia on commercial uses of



Titan IV launch from Cape Canaveral, Florida, carrying DoD satellite into orbit.

space by introducing Russian technology into vehicle development and launch processing. The use of Russian technology, especially advanced liquid rocket engines, could also reduce the development time and cost of a new launch system. However, a principal policy concern is whether the United States should consider relying on a non-U.S. system to launch military satellites.

Although difficult to measure, this option offers the potential for reduced long-term costs if savings from higher reliability (less frequent failures and the associated cost of stand-down) as well as benefits (lower unit and operations costs) for the civil and commercial launch sectors are taken into account. Nevertheless, preliminary analyses indicate that it could be several decades before this "payback" in savings would be realized.

Option 3 was the most difficult to quantify, because of the large uncertainties inherent in the cost estimates, the high technical risk of some of the launch systems, and the breadth of the technologies that require significant investments within and beyond the FYDP period. During the analysis of this option, some of the new approaches were found to entail less technical risk and thus could be considered as variants within Option 2. Because Option 2 would have a concept development phase that considered all possible alternatives – including expendable, partially reusable, and fully reusable launch vehicles – it was determined that the concept phase would result in a better understanding of the technical and cost risks associated with those concepts.

Option 3 provides the long-term potential for the lowest operating and maintenance costs, primarily because of reusability. It would also offer the greatest change to the industrial base, because of the significant differences associated with producing a small number of advanced launch vehicles (4-6) and the operations of a reusable system. There would also be a significant opportunity for cooperation with NASA in developing the technologies, since most would be applicable to both manned and unmanned systems. Nevertheless,

the near- and mid-term costs of developing and producing these advanced launchers would be very high.

Because of the need to structure a technology readiness program that would last through the end of the decade, and given the fact that development of such a vehicle would extend well into the first decade of the 21st century, we would need to maintain the current fleet much longer (until the year 2015). This would result in significant investment costs at a time when development expenditures for the new system would be at their highest. For these reasons and because there are concepts that have less technical risk, this option was not considered to be viable, especially given current and projected budget constraints.

The Decision

After reviewing the alternatives, we selected the austere life-extension option (1A). This option adequately fulfills DoD's projected space launch needs at the lowest cost over the next decade. It includes the improvements needed in our space launch infrastructure. It also retains the option for incremental improvements to the current launch fleet to support future needs. Although a new launcher development effort would have permitted us to attain our desired goals for operational flexibility and reliability, and would have contributed toward improved competitiveness of the U.S. commercial space launch industry, those benefits did not outweigh the near-term costs of such an approach.

SECTION V: MODERNIZATION

MILITARY SATELLITE COMMUNICATIONS

There are four segments to the military satellite communications (MILSATCOM) architecture. First, ultrahigh frequency (UHF) satellites are the workhorses for tactical ground, sea, and air forces. Second, the superhigh frequency (SHF) Defense Satellite Communications System (DSCS), first deployed in the 1970s, supports long-distance communications requirements of military forces that cannot be met by ground-based communications systems. The DSCS system satisfies the majority of DoD's medium- and high-data-rate communications requirements. Milstar will soon be integrated as the third segment of the MILSATCOM architecture. It will provide a worldwide, secure, jam-resistant communications capability to U.S. civilian and military leaders for command and control of military forces. The fourth segment consists of commercial communications satellites, which are used to support DoD's MILSATCOM capabilities where jamming protection is not required.

The Bottom-Up Review evaluated MILSATCOM program alternatives in light of the projected threat, operational requirements, cost and effectiveness trade-offs, and affordability. The primary emphasis was on providing low-data-rate (LDR) and medium-data-rate (MDR) communication capabilities for U.S. tactical forces employed in one or more major regional conflicts, although the review also addressed requirements for strategic forces.

While all current MILSATCOM programs were reviewed, the focus was on identifying and evaluating lower-cost alternatives to Milstar. Milstar is a joint-service program to develop and acquire satellites, mission control elements, and new or modified terminals to support extremely high frequency (EHF) communications. The Milstar system would directly support the National Command Authorities (NCA) and the tactical and strategic forces of the unified and specified commanders-in-chief (CINCs) during all levels of conflict.

The Problem

The original Milstar program, initiated in the early 1980s, was designed to provide LDR communications for strategic and tactical military forces, primarily during a nuclear conflict. The highest-priority users were expected to be strategic and nonstrategic nuclear forces, with tactical naval, ground, and air forces having a lower priority. The original design included many special features intended to allow the system to survive and operate during a nuclear conflict.

Because of the greatly reduced threat of nuclear war in the post-Cold War era, Congress directed DoD in the fall of 1990 to restructure the Milstar program (now designated Milstar II) to emphasize its utility for tactical military forces and to reduce system costs. The system's survivability and endurance features and constellation size also were reduced.

Nevertheless, during preparation of the FY 1994 defense budget, the issues of Milstar affordability and alternative satellite designs were raised again. The Bottom-Up Review thus undertook a comprehensive evaluation aimed at determining the costs and effects on military capabilities of the Milstar program and alternatives to it.

Current Program

The current Milstar program would launch the first two Milstar satellites (Milstar I, LDR-only) in FY 1994 and FY 1995, respectively, and would develop an MDR payload for the first Milstar II satellite, scheduled for launch in FY 1999. The current program also includes funding for an as-yet-undefined "polar adjunct" to Milstar and would continue preparations for a Defense Acquisition Board program review of that adjunct. A complete constellation of LDR and MDR satellites would be achieved with the launch of the

fourth Milstar II satellite. Replenishment of the four-satellite Milstar II constellation would occur between FY 2006 and FY 2009, with the exact launch dates to be determined by actual satellite longevity. Ultimately, nine Milstar II satellites would be bought through FY 2011, including a spare satellite planned for delivery in FY 2003. Total expenditures for the Milstar program during FY 1994-99 would be almost \$12 billion, including satellites and terminals.

Options Examined

As indicated in Figure 12, all alternatives to the current program would deploy advanced EHF satellites, and would therefore provide significantly more capability than we have today. All options would also launch the original two Milstar I satellites and eventually transition to Advanced EHF satellites that would be developed in the mid-to-late 1990s. The successor system would maintain as much LDR and MDR capability as possible while reducing satellite weight, which should help to reduce costs. The alternatives to the current program differ as to when the initial Advanced EHF satellite would be launched and, consequently, the MILSATCOM capabilities that would be provided in the meantime.

Option 1 (Milstar II/Advanced EHF) would retain four Milstar II satellites, with a first launch in FY 1999 (as in the current program), but it would eliminate the fifth Milstar II satellite (planned for delivery as a spare satellite in FY 2003) as well as subsequent Milstar II satellites. Full operational capability for LDR and MDR would be achieved on the same schedule as under the current program. Under this option, Advanced EHF satellites would be developed using advanced technology, to provide LDR and MDR capabilities comparable to those of Milstar II. Advanced EHF satellites would begin replenishing Milstar satellites around FY 2006.

Option 2 (MDR-Only/Advanced EHF) would cancel Milstar II and replace the four Milstar II satellites with satellites providing an MDR capability, but eliminating the LDR capability. The first MDR-only satellite would be launched in FY 2000, with a four-satellite constellation on orbit in FY 2003. This option would also develop Advanced EHF satellites with both MDR and LDR capability. The first of those satellites would be launched in about FY 2007.

Option 3 (Advanced EHF Only) would also cancel Milstar II, but it would replace that system with

MILSATCOM Launch Schedule

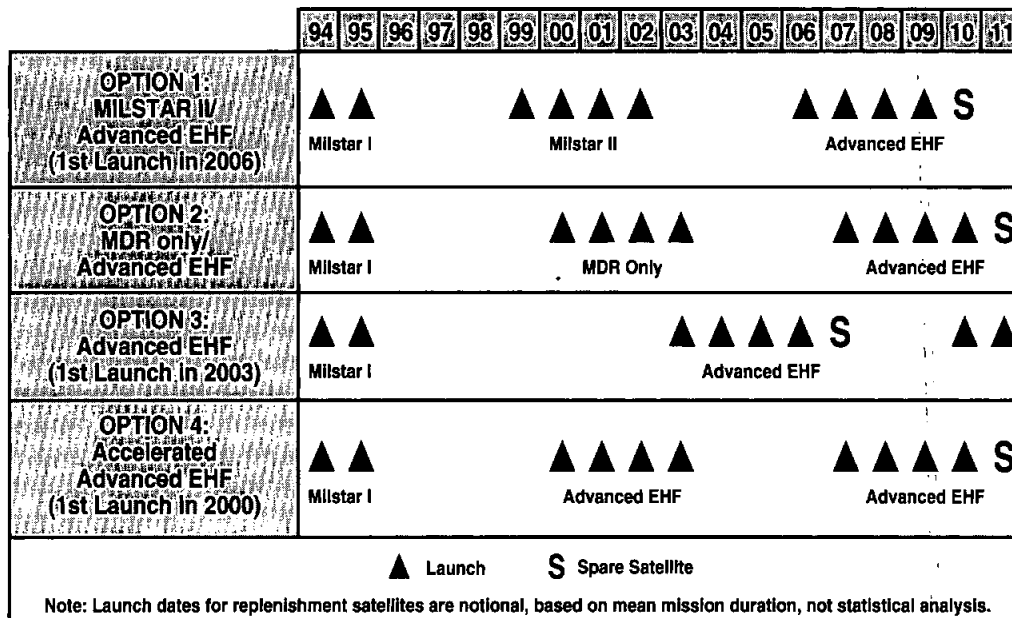


Figure 12

Advanced EHF satellites having both MDR and LDR capabilities. The first Advanced EHF satellite would be launched in FY 2003, with a four-satellite constellation in place in FY 2006.

Option 4 (Accelerated Advanced EHF) is similar to Option 3, except that it accelerates development of the Advanced EHF satellite, achieving a first launch in FY 2000 and a four-satellite constellation in FY 2003. This alternative would, if necessary, trade capability for weight on the initial satellites to maintain an FY 2000 launch date. Subsequent satellites could incorporate performance improvements, if needed.

Evaluation of Options

Two factors guided decisionmaking on Milstar alternatives. First, the military requirement for a jam-resistant advanced EHF communications system providing capability equivalent to Milstar II was reaffirmed early in the process. Second, while future national security requirements guided the evaluation of program alternatives, another important objective was to identify options that offered substantial cost savings relative to the current Milstar program.

An outside Technical Support Group was established to review the options and assess the level of risk, as well as to develop and evaluate additional Milstar alternatives. The Technical Support Group concluded that the most effective way to provide the desired communications capability in a cost-constrained environment would be with the new-design Advanced EHF satellites, deployed in geostationary orbits and providing both LDR and MDR capability.

The primary reason for considering options to the current Milstar program was to reduce system cost. Milstar II satellites would weigh approximately 10,000 pounds and, consequently, would have to be launched on Titan IV rockets — an expensive launching mode. The Technical Support Group recommended that DoD take advantage of recent technological advances to build substantially lighter satellites that could nevertheless provide performance comparable to Milstar II. The group concluded that a reasonable objective would

be to transition to a lighter, advanced EHF satellite that could be boosted into orbit by a medium-launch vehicle (MLV). This would limit costs, which have historically been related to satellite weight.

The consensus of the Technical Support Group was that an Advanced EHF satellite that could be launched from an MLV could be available by 2003. However, the four-year delay between the scheduled launch of the first Milstar II satellite and the postulated launch of the first Advanced EHF satellite was a concern. Consequently, the Technical Support Group considered what capabilities could be provided on an Advanced EHF satellite if the first launch was accelerated to 2000.

The Technical Support Group did not reach a consensus on whether such an accelerated deployment of Advanced EHF satellites was possible. It identified as a major risk the lack of maturity in the packaging for microwave and digital electronics. A first launch in 2000 would be possible, according to some of the group members, using technology already developed or currently under development. Other members of the group concluded that there would be major risks associated with the concurrent technology demonstration, satellite design, and streamlined test program inherent in Option 4.

Cost Comparison

Total space segment costs (including launch costs) in FY 1994-2011 for the alternatives considered in the review ranged from \$6.1 billion for the least costly option (Option 3) to \$13.9 billion for the current program. Cost estimates for Option 4 varied from \$7.2 billion to \$11.3 billion, depending upon assumptions about risk of payload weight growth or schedule slippage.

Option 1 has essentially the same FY 1994-99 costs as the current program because it retains the first four Milstar II satellites, although it does achieve about \$300 million in cost savings by canceling the Milstar II spare satellite. Further cost savings are achieved beyond the FYDP period by transitioning to the lower-

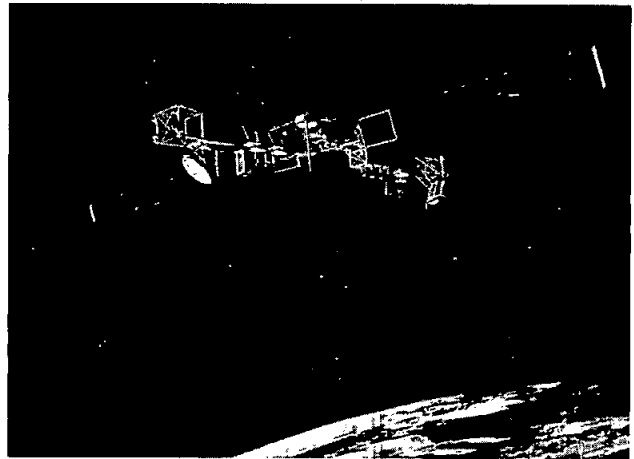
cost Advanced EHF satellite. FYDP savings of the other three options come predominantly from canceling the Milstar II program immediately and deferring MDR capability.

There are also differences in launch costs among the options, driven primarily by the differences in costs of the launch vehicles for the Milstar II satellites (Titan IV) and Advanced EHF satellites (Atlas IIAS). The Titan IV costs approximately \$285 million per launch and the Atlas IIAS about \$115 million.

Effectiveness Comparison

All of the alternatives to the current program would eventually provide sufficient LDR and MDR capability, although each has some shortfalls compared to the current program. The LDR shortfall is most severe in Option 2 because that option provides no substantial LDR capability until Advanced EHF satellites are launched beginning in 2007. Option 3, which provides for initial operations of Advanced EHF satellites in FY 2003, would delay initial MDR service by four years relative to the current program. Options 2 and 4 would delay MDR service by one year.

The Joint Staff assessed each option's ability to fulfill military requirements for EHF communications. It concluded that, while the concept of an advanced EHF follow-on to Milstar II is acceptable, the system should be designed to meet military requirements, not cost or weight limits. Options 2 and 3 were judged unacceptable because their schedules provide capabilities much later than does the current program or Option 1. The technical, cost, and schedule risks of Option 4 were considered to be too high. The Joint Staff also concluded that the LDR capability provided by Advanced EHF satellites would be reduced relative to Milstar II because these satellites would provide fewer antennas than Milstar II.



Milstar

In summary, the options differ in cost, capability, risk, and schedule. Those options that do not contain Milstar II satellites trade costs for capability and/or schedule. As cost savings increase, risk increases and deployment of EHF capability is delayed.

The options containing four Milstar IIs were determined to be most preferable because a constellation of that size would meet military requirements and provide the most operational capability at the earliest date. Option 3 was considered unacceptable because it would delay LDR and MDR capability by four years. Option 4 would provide capability sooner, but its schedule was considered high risk.

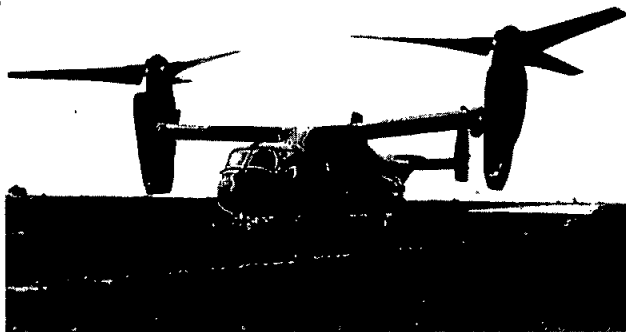
The Decision

After reviewing the alternatives, we decided to proceed with Option 1, deploying both Milstar I and the initial constellation of Milstar II satellites, then transitioning to a lower-cost, lower-weight Advanced EHF satellite that would be launched initially by FY 2006. We believe that this represents the best means of achieving a needed military communications capability in the near term while potentially reducing the long-term costs associated with sustaining this capability.

SECTION V: MODERNIZATION

V-22 OSPREY TILT-ROTOR AIRCRAFT

In 1981, the V-22 program was initiated as a joint-service effort to develop a tilt-rotor aircraft incorporating advanced avionics and composite technologies. Such a system would offer significant improvements over existing and projected helicopter capabilities. As originally envisioned, the V-22 Osprey aircraft was to be produced in various versions for use in a range of military missions. Initially led by the Army, the V-22 program was transferred to the Navy in 1982, when the Army withdrew because of concerns about the system's affordability. One of the principal intended users of the V-22 was to be the Marine Corps, which has an acute need to replace the CH-46 and CH-53 helicopters that fulfill its medium-lift requirement — that is, transporting personnel, supplies, and equipment ashore during amphibious assaults. The V-22 was intended to satisfy certain Navy, Air Force, and special operations force (SOF) needs as well.



V-22 Osprey.

In 1989, the V-22 program was terminated by the Bush Administration, and then-Secretary of Defense Cheney directed the Navy to develop an alternative aircraft. In response, the Navy established and funded a program to investigate an alternative, called the Medium Lift Replacement (MLR). However, Congress consistently voted to fund continued V-22 development and refused to provide funding for the MLR program.

In July 1992, DoD and Congress worked out a compromise that added funding to the defense budget for demonstrations of both V-22 technology and other medium-lift helicopter technology, leaving for future years the decision on which technology would best meet DoD's medium-lift needs. Over the succeeding years, development of the V-22 at a limited funding level proceeded and study of an alternative MLR helicopter was begun.

The Problem

While the Congress and the Bush Administration dueled over the merits of the V-22, the Marine Corps' need for a medium-lift replacement aircraft grew. Its inventory of CH-46s and CH-53As and Ds continued to age and decline through attrition, resulting in a fleet that cannot currently meet Marine Corps requirements. Moreover, while the compromise on V-22 worked out between the Congress and the Bush Administration kept the V-22 program alive, the Bush 1994-99 FYDP did not fund V-22 development at a level sufficient to allow the system to proceed toward production.

Status of the V-22 Program

No task force was established under the Bottom-Up Review to examine the V-22 program because the program is being reviewed under the auspices of the Defense Acquisition Board (DAB). On June 30, a committee within the DAB reported to the Under Secretary of Defense for Acquisition on the status of its V-22 review, taking into consideration applications of the V-22 for both the Marine Corps and special operations forces, and the status of the alternative MLR program.

The purpose of this review was to: (1) decide on a path for defining the right program to meet relevant requirements for the Marine Corps and SOF; (2) re-

view the status of the V-22 and MLR programs, including the technical objectives, milestones, funding, contract structure, and technical and cost risks entailed; and (3) provide guidelines to support a future decision on the requirements, structure, and funding of the two programs. The review also examined potential commercial applications of tilt-rotor technology. The range of V-22 options examined over the past several months covered various funding and procurement profiles for SOF and the Marine Corps.

In June, the DAB concluded that a focused effort should be undertaken over the next few months to define the acquisition options more precisely. There will be a series of reports and progress reviews, all coordinated by the Under Secretary of Defense for Acquisition, leading to a program decision in the fall of 1993. We expect that these efforts will provide a range of V-22 options and MLR helicopter alternatives to guide the Department in choosing the right option to fulfill SOF air transport and Marine Corps medium-lift requirements in a cost-effective and affordable manner.

SECTION VI

INITIATIVES

The new dangers and opportunities of the post-Cold War world require the United States to act proactively to protect and enhance its national security. We must seek not only to counter threats to our security as they arise, but to prevent them from occurring in the first place. We must also seize opportunities to shape the international environment in ways favorable to our interests. Toward these ends, the Department of Defense is undertaking a series of new policy initiatives, including:

- Cooperative threat reduction
- Counterproliferation
- Former Soviet Union defense/military partnership
- Global cooperative initiatives — peacekeeping and peace enforcement, humanitarian assistance, disaster/famine relief, and the promotion of democracy through military-to-military contacts.

By mitigating the dangers against which future defense dollars would otherwise have to be spent, these initiatives have the potential to save more than they cost.

Cooperative Threat Reduction

As Russia, Belarus, Ukraine, and Kazakhstan implement their respective arms reduction commitments and responses to the U.S. presidential nuclear initiatives of September 1991 and January 1992, hundreds of strategic offensive arms and thousands of nuclear warheads must be dismantled. Russia must also ensure the safety and security of its remaining nuclear arsenal and meet its commitment to completely destroy the huge chemical arsenal it inherited from the former Soviet Union.

These would be difficult tasks even without the massive economic, political, and military dislocations engendered by the dissolution of the former Soviet Union. But such dislocations have increased the risk that nuclear weapons could be subject to accidental or unauthorized use, could form the basis for the emergence of new nuclear weapons states, or even could fall into the hands of terrorist groups. The dislocations have also increased the danger that the materials and know-how needed to develop nuclear weapons could leak through porous FSU borders to other countries.

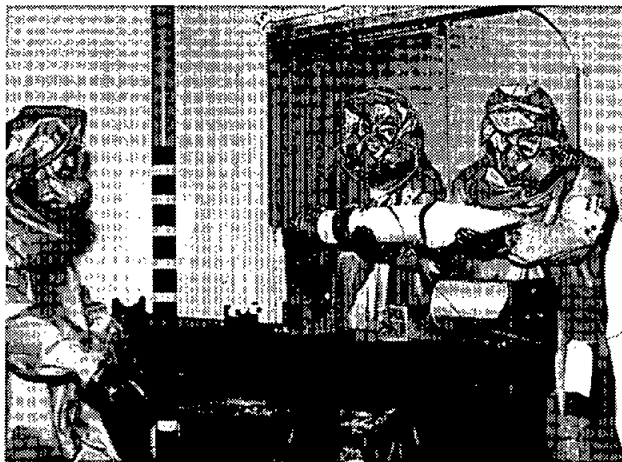
The United States simply cannot afford to ignore these risks. The Cooperative Threat Reduction initiative aims to reinvigorate and expand upon past and ongoing U.S. efforts to actively assist in the destruction of FSU weapons of mass destruction and the prevention of weapons proliferation.

Specifically, this initiative builds upon the historic "Nunn-Lugar" legislation, which authorized the Department of Defense to transfer, subject to restrictions, up to \$800 million in FY 1992-93 appropriations or working capital accounts to assist eligible FSU states to:

- Destroy nuclear, chemical, and other weapons.
- Transport, store, disable, and safeguard weapons in connection with their destruction.
- Establish verifiable safeguards against the proliferation of such weapons.
- Facilitate demilitarization of defense industries and conversion of military technologies and capabilities to civilian use.
- Expand military-to-military and defense contacts between the United States and the newly independent states.

The United States has made political commitments to provide approximately \$420 million in Nunn-Lugar assistance to Russia, at least \$175 million to Ukraine, and up to \$75 million to Belarus. To date, the Department of Defense has notified Congress of proposed obligations totaling \$488.5 million for specific Nunn-Lugar projects for which the necessary agreements are signed or awaiting signature or parliamentary ratification. If ongoing discussions with the eligible states prove successful, additional implementing agreements could be signed in the next few months that would absorb nearly all of the remaining \$311.5 million.

The Cooperative Threat Reduction initiative for the FY 1994-99 period retains key elements of the existing "Nunn-Lugar" legislation — in particular, its emphasis on the safe and secure transportation, storage, and elimination of nuclear weapons and on non-proliferation — and targets some new areas for additional assistance as well:



Workers disassembling chemical munitions.

- Destroying weapons of mass destruction in the FSU and removing all nuclear weapons from Ukraine, Belarus, and Kazakhstan, including dismantling strategic nuclear delivery vehicles to comply with the START I and II treaties and destroying chemical weapons.

- Constructing a safe, secure, and environmentally sound storage facility for fissile material from dismantled nuclear weapons in Russia.
- Preventing the proliferation of weapons of mass destruction, their components, related technology, and expertise within and beyond FSU borders, including the establishment of effective export-control systems, fissile material control and accountability systems, physical protection systems and, possibly, additional resources for the science and technology centers being established in Moscow and Kiev.
- Advancing the complex and costly effort to achieve the environmentally safe elimination of the chemical weapons arsenal in Russia.
- Other projects to keep the process of denuclearization and demilitarization on track in the FSU, including environmental restoration of former strategic offensive arms bases, defense conversion, retraining and housing of former military officers, and expanded military and defense contacts.

To implement this initiative, a separate Cooperative Threat Reduction line-item account is being proposed with an additional \$400 million in DoD funding for FY 1994, to remain available until expended.

The United States cannot and should not bear the entire threat reduction bill for these four newly independent states, and we will continue to insist that they do their part. We are also pressing key European allies and Japan to increase their helpful, but relatively modest, assistance to the FSU in this area.

This initiative will require a significant effort by the Administration, Congress, and ultimately the American people. But it is essential to U.S. and international security in the post-Cold War era. This is not "foreign assistance" as traditionally defined. Rather, it is a unique and relatively small investment in U.S. national

security from which we stand to reap great benefits, including savings in defense programs that might otherwise be necessary to deter or defend against FSU weapons of mass destruction in the future.

Counterproliferation

More than 25 nations either have or are attempting to acquire weapons of mass destruction — nuclear, biological, or chemical. In most areas where U.S. forces could potentially be engaged, our likely adversaries already possess chemical and biological weapons. Most of these states are striving to acquire nuclear arsenals as well.

Several new realities are contributing to the spread of WMD and related technology. First, alternative suppliers of WMD technologies and delivery systems are emerging, with countries such as North Korea offering to sell technologies and missiles with little regard for the ambitions of recipient states. In addition, the indigenous capabilities of countries of concern are improving. There is also the new danger of nuclear, biological, and chemical weapons, materials, equipment, and knowledge leaking from the former Soviet Union. Further, the challenges associated with controlling dual-use technologies have grown.

In the hands of a hostile regional power, weapons of mass destruction could threaten not only U.S. lives but also the viability of our regional power projection strategy. For example, if a state opposed to U.S. interests were to acquire nuclear weapons, it could use them in a conflict or crisis in any number of ways, from threatening to attack a neighboring state in an effort to dissuade it from requesting U.S. assistance to threatening American and allied forces or cities in an effort to deter U.S. intervention altogether. Furthermore, the unpredictable nature of some Third World regimes, coupled with the fact that potential adversaries may have more at stake in a regional conflict than the United States, means that the United States' ability to deter such actions may at best be uncertain.

In these circumstances, our nation not only must seek to prevent the spread of weapons of mass destruction, but it must be prepared to respond to the military

threat posed by these weapons should nonproliferation efforts fail. We are not resigned to the failure of nonproliferation regimes; rather, confronted with the possibility of even limited failure, we must ensure that our forces have the capabilities they would need to confront an opponent armed with weapons of mass destruction in a future crisis or conflict. The counterproliferation initiative is designed to develop a coherent strategy to prevent additional countries from acquiring WMD and, should such efforts fail, to deter these weapons' use against the United States and its allies, to defend against them if they are used, and to ensure that U.S. armed forces can successfully carry out operations in a conflict involving the use of nuclear, chemical, or biological weapons.

Toward that end, we are assessing the military capabilities needed and correcting any deficiencies that may exist. Our assessment will cover the following broad areas:

- Intelligence
- Battlefield detection
- Passive defenses
- Active defenses
- Counterforce capabilities
- Inspection and verification support
- Export control support

DoD's counterproliferation approach, which is designed to complement and strengthen the traditional nonproliferation efforts of other U.S. government agencies, will be implemented in three parts. First, we will strive to foster an international environment that discourages the proliferation of weapons of mass destruction and to strengthen export controls and related arms control arrangements. Second, in our forces and programs, we will determine the specific capabilities needed to counter proliferation, identify existing DoD efforts that contribute to these capabilities, specify remaining deficiencies vis-a-vis threats from weapons of mass destruction, and devise programmatic options to address those deficiencies. Finally, in our tactics and contingency plans, we will seek to improve our ability to deter the use of nuclear, chemical, and biological weapons, to develop doctrine and tactics for dealing with them, and to incorporate WMD threats into our planning.

This initiative will be a multifaceted, multiyear effort involving numerous and diverse components of DoD. Not all of these activities are captured in the \$40.5 million requested for counterproliferation in FY 1994.

Countering proliferation is central to addressing both nuclear and regional dangers in the post-Cold War world. Strengthening the U.S. military's capabilities for meeting the threat of the proliferation of weapons of mass destruction is one of the Department's most important responsibilities in the new security environment.

FSU Defense/Military Partnership

The post-Cold War trend toward democracy and liberal reform only bolsters the security of the United States. Not only are Western values ascendant, but prospects for the peaceful resolution of disputes improve as democracy spreads, and the potential for global prosperity increases as more countries adopt market reforms.

But these trends are not irreversible. In most former communist countries, democratic institutions are not yet firmly in place, and market reforms have yet to produce tangible improvements in the standard of living. The reversal of these trends could have a profound impact on U.S. security and on U.S. defense requirements. Nowhere is this more true than in the former Soviet Union.

The FSU Defense/Military Partnership initiative seeks both to lessen the likelihood of the failure of reform and to hedge against it. Its primary objective is to develop a solid partnership between the defense establishments of the United States and the former Soviet Union in an effort to encourage support for reform, develop FSU militaries responsible to democratically elected officials, encourage U.S.-FSU defense cooperation in areas ranging from regional conflicts to counterproliferation, and convince an expanding circle of officers and officials that the United States seeks a real partnership. Particular attention will be

paid to Russia, Ukraine, Kazakhstan, and Belarus — the four FSU states with nuclear weapons still maintained on their soil. Enhancing our military cooperation with these states and building partnerships with them will be crucial in facing the dangers of the post-Cold War era.



Russian Federation Minister of Defense Grachev and Secretary Aspin signing memorandum of understanding on defense contacts.

This initiative has three main components:

- **Expanded defense and military contacts**, moving beyond a series of single contacts to programs that foster ongoing relationships between individual U.S. and FSU military/defense leaders or provide concrete technical assistance.
- **Enhanced military cooperation**, expanding on unit exchanges, sister base/unit programs, and ship visits, and developing the capability for combined peacekeeping, humanitarian assistance, and other noncombat operations.
- **Support for transition and reform**, focusing on concrete measures to address pressing social concerns affecting the military, such as military housing shortages, inadequate medical care, and environmental degradation at military sites.

FY 1994 funding for this initiative comes from the Cooperative Threat Reduction line item.

Global Cooperative Initiatives

The Global Cooperative Initiatives seek to improve our ability to respond to new regional dangers while positioning us to capitalize on a number of post-Cold War opportunities. They do not, however, prejudge when or how we should respond to a given situation. Rather, they seek to enable DoD, in cooperation with other U.S. government agencies, to prepare the ground for a more effective U.S. response if and when such a response is deemed appropriate and necessary by the President and the Congress.

More specifically, these initiatives seek to enhance DoD planning and capabilities for peacekeeping and peace enforcement operations, humanitarian assistance measures, disaster and famine relief activities, and the promotion of democracy. As such, they are only one part of what must be a national, multi-agency effort in these areas.

Peacekeeping and Peace Enforcement Operations

Traditionally, *peacekeeping* — military operations, undertaken with the consent of all major belligerents, that are designed to monitor and facilitate implementation of an existing truce agreement in support of diplomatic efforts to reach a political settlement to a dispute — and *peace enforcement* — military intervention to compel compliance with international sanctions or resolutions designed to maintain or restore international peace and security — have been seen as secondary missions for the U.S. military. They have been lesser-included cases of more demanding missions, such as fighting and winning major regional conflicts. Accordingly, planning for these missions has often been undertaken on an ad hoc basis, and funding has generally been drawn from operations and maintenance accounts as needed. As a result, these operations have often been funded at the expense of readiness, pending subsequent reprogramming or supplemental funding. Keeping our forces ready to fight requires that we do business differently in the future.

As peacekeeping and peace enforcement gain new prominence among U.S. military missions in the post-Cold War era, DoD will earmark funds for these missions to help other countries and the United Nations strengthen their peacekeeping and peace enforcement capabilities, and in so doing reduce the demand for U.S. forces. Investments in this area also will facilitate rapid military responses to decisions to commit U.S. forces to such operations; they will minimize the impact of U.S. participation in such operations on service budgets; and they will permit greater policy oversight of these operations.

Proposed funding for these initiatives is \$300 million in FY 1994: \$260 million for reimbursement of incremental DoD costs for peacekeeping and peace enforcement and \$40 million for assistance to third countries and international organizations in support of sanctioned international peacekeeping or peace enforcement activities.

Humanitarian Assistance and Disaster/Famine Relief

The rise of regional dangers on the U.S. security agenda has increased the importance of the U.S. military's role in providing humanitarian assistance and disaster and famine relief to foreign populations in need. Operations directed at alleviating human suffering and meeting the basic needs of victims of social dislocation, economic strife, political conflict, or natural disasters can, in some cases, be the best foreign policy instrument available to the United States. Humanitarian operations can also prove an effective means of addressing potential sources of regional instability before they lead to armed conflict, and of promoting recovery and nation-building after crises have occurred.

In FY 1993, \$28 million in DoD funds was appropriated for humanitarian assistance programs, \$50 million was provided for disaster relief activities, and \$10 million was allocated for disaster relief planning. In addition, \$40 million was provided in supplemental appropriations for Kurdish relief efforts in FY 1992 and \$115 million was transferred from other DoD

appropriations to provide humanitarian assistance to the former Soviet Union in FY 1992-93. Much of this assistance took the form of DoD deliveries of excess property as well as privately donated supplies — including medical supplies, clothing, shelter, food, heavy equipment, and vehicles. It also included coordinating large-scale air, land, and sea operations and evacuating refugees and disaster victims in need of medical care.

The Humanitarian Assistance and Disaster/Famine Relief initiative will consolidate a wide variety of existing programs under a single umbrella within DoD to:

- Develop and refine strategies for delivering excess DoD property, privately donated supplies, and other assistance to countries in need.
- Improve the efficiency, effectiveness, and timeliness of DoD's existing humanitarian assistance and disaster and famine relief efforts.
- Facilitate contingency planning with other U.S. government agencies as well as international and nongovernmental organizations to ensure DoD relief preparedness.
- Expand cooperative relationships with leading U.N., private voluntary, and other international organizations to facilitate non-U.S. government humanitarian assistance efforts.

Proposed funding for FY 1994 is \$48 million for humanitarian assistance and \$50 million for disaster/famine relief, including:

- **Excess property donations:** Repairs, packing, processing, warehousing, and other costs associated with preparing property for delivery.
- **Transportation assistance:** Air, sea, and overland transportation of personnel and materiel.
- **Planning and training:** Preparedness and assessment activities, including studies, exercises, and specialized training.

- **Relief activities:** Provision of shelter, food, water, and medical supplies to countries in need.

Promotion of Democracy

One of the most significant dangers in the post-Cold War era is the possibility that democratic reform in newly independent states might fail, reducing the chances that a coalition of democracies favoring peaceful means of resolving disputes will take root and flourish. One of the most significant opportunities for the United States in this new era is the chance to promote democracy in other countries and, in so doing, to promote a more peaceful world.

The Department of Defense has an important role to play in promoting democracy. Toward this end, it has requested \$50 million in FY 1994 to develop and integrate a variety of military-to-military programs and associated defense contacts as well as other activities designed to promote democracy. These efforts focus on countries other than those targeted for assistance under the Cooperative Threat Reduction initiative. The programs include:

- **Ongoing military and defense contacts** that focus on familiarizing military and defense officials from emerging democracies with appropriate roles of a professional military in a constitutional democracy, such as the Army European Command's Joint Contact Team program in central and eastern Europe.
- **Expanding such military and defense contacts** to additional countries in eastern Europe.
- **Developing similar contact programs in other regions**, namely Africa, Latin America, Asia, and the Pacific.

Promoting democracy in other countries is central to international stability and to the prospect of a more peaceful world. This relatively small expenditure of DoD resources has the potential to obviate the need for the far more costly defense efforts that might be necessary should democratization fail.

SECTION VII: DEFENSE FOUNDATIONS

FORCES READY TO FIGHT

The first priority of the Clinton-Aspin defense plan is to ensure that the United States has forces ready to fight today and in the future.

Currently, we have the best and most ready military force in the world. We have worked hard to get it that way over the past several years. Now, we face the even more difficult challenge of preserving readiness as we reduce the defense budget, draw down our overall force structure, and reorient our armed forces toward the new dangers facing us in the post-Cold War world.

Our approach to preserving readiness will be not only to identify readiness problems as they emerge and take corrective action, but also to anticipate, and thus prevent, problems from occurring through development of a readiness "early warning system." This focus on prevention guides our readiness planning and organizational innovation. It is also one of our most difficult challenges.

Defining Readiness

The first problem in addressing the issue of readiness is that there is no simple way to define what readiness is, and what it is not. Broadly speaking, almost everything DoD does is related to readiness. Yet, such a broad definition suggests that any reduction in the overall defense budget automatically reduces readiness — an overly simplistic conclusion that does not help to establish priorities in defense planning. However, too narrow a definition may shift the focus to individual units, underemphasizing the "joint" readiness we seek from our forces as a whole.

Current definitions of readiness, established during the Cold War, need to be updated to address new dangers and conform with the new defense strategy and forces that have resulted from the Bottom-Up Review. One of our primary challenges, therefore, is to define readiness broadly enough to include elements of

jointness and sustainability while reflecting the shifting requirements of the post-Cold War era.

Once an updated definition of readiness has been developed, we must proceed to establish:

- Clear and agreed-upon standards that specify the levels of performance our forces must be able to attain.
- Reliable measurements to assess whether current and future forces meet these standards.
- Responsive management structures to ensure that readiness receives appropriate attention within the policymaking and resource allocation processes.

Standards

Determining standards for readiness used to be easy: The Soviet Union was our principal enemy and the main readiness standard was a requirement to be able to halt an attack on Western Europe by Warsaw Pact forces. We no longer face a single potential adversary or have a familiar and long-standing scenario for which to prepare. Our forces may be called upon to fight on short notice in any of a number of locations or conditions, or they may have to be inserted into a civil conflict where they would seek to enforce a peace settlement among warring factions.

Traditionally, levels of readiness have been determined by specified metrics. We are working to determine whether existing standards could be supplemented or replaced by other standards more appropriate to the requirements of the new defense strategy.

Our broad standards of readiness should be determined by the ability of our forces to carry out our defense strategy, specifically the requirement to be

able to fight and win two nearly simultaneous major regional conflicts. Appropriate offices within OSD, the Joint Staff, the services, and the combatant commands will determine guidelines for establishing readiness standards.

Measurements

Once standards have been set, we must develop reliable measurements to help determine whether or not our forces are meeting the standards. Currently, we measure readiness either by looking at inputs, such as flying hours per month and steaming hours per quarter, or by examining outputs, such as C-ratings (measurements of equipment fill, manning, level of training, and so forth) for various units. The trouble with inputs is that they measure only the factors that contribute to readiness. Output measures are suspect because they are very subjective and are done on a piecemeal basis by different people judging disparate units using varied criteria.

Another shortcoming of the current readiness reporting system is that it scrutinizes most carefully the readiness of the front-line troops that would be called on first in a crisis, but doesn't assess the rest of the force as carefully. However, because most commanders will accept risks to some parts of the force structure in order to keep "cutting edge" combat troops at the highest readiness state, degradations in the readiness of these other components are often slow to be perceived.

While the current system of measuring readiness does not need to be abandoned, existing measures of readiness do need to be augmented with new approaches to evaluating troop performance. Not only are better measures of readiness needed at the individual and unit level, but we must find ways to evaluate the readiness of joint forces — thereby ensuring that our combat forces are adequately trained, equipped, and supported to conduct joint and combined operations ranging from smaller contingencies to major regional conflicts. These new measures must examine both inputs and outputs to watch for warning signs of decreased readiness. Some possible warning signs include:

- Increased tempos of operations for both units and individual personnel necessitated by either routine or crisis commitments.
- Transfers of funds out of readiness accounts to support unscheduled deployments.
- Decreases, cancellations, or deferrals of planned training or logistics support activities and functions.

To get a true picture of force readiness, we need to identify key indicators and use them to project or confirm longer-term trends. In that regard, we are watching existing indicators and developing new ones — especially measures that will allow us to prevent future readiness problems — to improve our ability to oversee and manage readiness. The following examples illustrate the complexities of readiness assessment and forecasting.

This spring, the national media reported that we had experienced reduced success in attaining both the desired number and quality of military recruits. A longer-term view, however, suggests that this reduced recruiting success came at the traditional annual low point in recruiting (April/May pre-high school graduation). Subsequently, our indicators have projected that FY 1993 recruit quality will remain above that of pre-Desert Shield/Desert Storm experience.

Similarly, it was reported that there had been a "reduced propensity to enlist." Taken alone, this might be seen as a problem. A more balanced view, however, must consider the impact of the force drawdown, with its associated reduced need for recruits, as well as the growing number of eligible youths in the recruiting pool. Doing so provides a more optimistic outcome.

Finally, it has been argued that readiness and training were reduced by our large-scale contingency operations in Somalia, Iraq, and Bosnia. It is certainly true that this year's operating tempo was exceptionally high. As a result, we had to divert funds from the operations and maintenance (O&M) account to support these efforts. Without timely corrective actions,

this can hurt readiness. To some extent, recovery in readiness and related accounts can be accomplished through reprogramming, as was done in this year's supplemental and reprogramming requests. However, in order to preclude, or at least to mitigate, the impact of future contingency operations on readiness, the FY 1994 defense budget request included \$448 million for contingency operations: peacekeeping/peace enforcement, humanitarian assistance, democracy building, and disaster relief.

By expanding and improving our measures of readiness, in line with standards agreed upon by OSD, the CINCs, and the services, we can get a better appreciation of the status of our forces, and what supplemental steps are needed to maintain their readiness.

Management

The last step in the process of improving our means of maintaining high combat readiness is the creation of management structures within DoD that ensure that readiness concerns permeate all levels of decision-making.

First, there must be no doubt that preserving readiness is the cornerstone of our new defense strategy. The Clinton Administration and its defense team have made maintaining forces ready to fight the number one defense priority. This emphasis will be reflected, for example, in the Defense Planning Guidance and other key DoD planning and programming documents. These documents direct the services, which have principal responsibility for readiness, to make combat readiness the first priority in their programs and budgets.

In addition, several organizational initiatives related to readiness are underway. The OSD staff is being reorganized to create a new Assistant Secretary for Personnel and Readiness. This position will provide a single focal point for overseeing all aspects of readiness. There are also three readiness committees that have been formed to examine different aspects of the issue.

- **Senior Readiness Council.** This senior-level forum is chaired by the Deputy Secretary of Defense and includes the Vice Chairman of the Joint Chiefs of Staff and the service chiefs, with the Assistant Secretary of Defense for Personnel and Readiness serving as Executive Secretary. The group was created to bring together the key military leaders who are responsible for advising the Secretary and the Deputy Secretary of Defense on readiness policy. Specifically, the group will be attempting to link near-term considerations with longer-term programs and to alert OSD to any critical readiness problems that may occur. The panel will receive and consider recommendations made by the Readiness Task Force and the Readiness Working Group (discussed below), and other sources.

- **Readiness Task Force.** This group, operating under the Defense Science Board and headed by General Edward C. "Shy" Meyer (USA-Ret.), consists of eight retired general and flag officers. It was created to provide the Secretary and Deputy Secretary of Defense expert outside advice and alert them to critical readiness issues. The Meyer panel will meet as required and periodically visit units in the field in order to develop insights on readiness matters and provide recommendations to the Secretary. It will focus on establishing key readiness indicators — especially those that provide early warning of future problems — and alerting the Secretary and the Senior Readiness Council to critical readiness concerns it may identify.

- **Readiness Working Group.** This group, to be chaired by the Assistant Secretary of Defense for Personnel and Readiness, will include senior representatives from the Joint Staff, the services, and offices within OSD. It will be the primary forum in DoD for raising, discussing, evaluating, and recommending solutions to readiness issues. The Readiness Working Group will also be responsible for overseeing the implementation of readiness initiatives, programs, and decisions. The group will charter studies of readiness issues, ensure that DoD readiness goals are met, convey the Secretary of Defense's readiness decisions throughout the department, and develop and use readiness early-warning indicators to alert DoD and advise the Secretary on readiness-related issues.

Funding Issues

Despite the promise of these new standards, measures, and organizations, without adequate funding, readiness will decrease. Too often in the past, readiness has suffered when increased operating tempos, caused by crisis responses around the globe, have forced the services to draw from the same operations and maintenance accounts that fund readiness. In the first years of the post-Cold War era, we have already been involved in many such operations, from peacekeeping and peace enforcement to humanitarian assistance and disaster relief.

This is especially true in the case of smaller-scale operations where reimbursements from other sources

— whether contributions from coalition partners or a supplemental appropriation from Congress — are not readily available. Frequently, when reimbursements to the services have been received, they have come after decreases in readiness — as a result of missed training or deferred maintenance — have already occurred.

The establishment of a special peacekeeping account in the FY 1994 budget to fund U.S. commitments to such operations will help to avoid siphoning off O&M funds needed for readiness. However, this fund is insufficient to support larger, long-term deployments of U.S. forces to these operations. In the future, DoD will press to get such contingency operations funded through supplemental budget requests as rapidly as possible.

SECTION VII: DEFENSE FOUNDATIONS

FAIRNESS TO PERSONNEL

People are at the heart of our armed forces. The best planning, the highest-technology weapons, and the most well-conceived strategy will have no impact if the military personnel upon whom the planning, weapons, and strategy depend are not fully motivated and trained.

In order to meet Cold War threats, we created the most highly professional, trained, and motivated force in the world. The results of those efforts were clearly seen in the overwhelming victory achieved in Operation Desert Storm. To meet the new dangers and seize the new opportunities of the post-Cold War environment, we need to maintain those qualities in our people.

During this era of shrinking budgets and force reductions, we have a responsibility to those individuals remaining in the military to maintain their quality of life and to ensure that they retain the high level of professionalism they have worked so hard to attain. We also have a responsibility to treat fairly and ease the transition of those who will be leaving the military, as well as the people and communities who supported our forces—from defense workers to the communities losing bases or defense plants.

Our Commitment to People in the Force

Our first challenge as we reduce the size of our defense structure is to make sure that our military remains the most dedicated and professional in the world. With the range of activities that America's armed forces will be involved in, it is more important than ever that we provide the full range and quality of support, training, and education that our troops need. In order to meet this challenge, DoD will pursue the following objectives:

- **Maintain high recruit quality.** We must continue to ensure that we recruit the best young men

and women we can for our armed forces. Thus far, the services have continued to meet their recruiting objectives with top-notch people, although educational achievements of incoming personnel have declined slightly from the unprecedented highs of the past few years. Somewhat worrisome is the fact that some surveys indicate that interest in joining the armed forces is beginning to decline among America's youth. This appears to be due, in part, to the uncertainty they perceive as to the long-term viability of a military career. We plan to take steps to halt both these trends. Two steps that will help are to provide adequate funding and support for our advertising and enlistment bonus programs so that they continue to work effectively.

- **Successfully implement social changes.** Our armed forces will be going through significant social changes as we seek to expand the number and types of opportunities available to service women and to implement President Clinton's decision on homosexuals in the military. We must implement these new policies in a careful, practical, fair, and consistent way, while preserving the current high levels of combat effectiveness and unit cohesion in our armed forces.

- **Maintain the quality of life of our military personnel and their families.** Our ability to attract and retain high-quality men and women in the armed forces will be heavily influenced by our ability to provide a military lifestyle that encourages talented people to join and remain in the military. To achieve this goal, we are implementing a proactive, "people first" strategy. We must provide adequate compensation, benefit levels, and "quality-of-life" incentives, while continuing to improve our welfare and recreation activities, dependent education, child development, youth activity, and family support programs. We must also monitor the tempo of operations of our deployed forces so that our troops and their families will not be hit so hard by frequent, lengthy separations.

- **Training.** We must also provide rigorous, realistic, and challenging training to our troops if we are to keep their readiness high. We are determined to maintain adequate funding for field training and related programs, such as expanded use of combat simulators.

- **Limit disruptions as the personnel drawdown proceeds.** Perhaps our most important goal is to manage the personnel drawdown process intelligently, with as little disruption to our armed forces as possible. As the drawdown proceeds, there will inevitably be some upheavals and reorganizations. We will face a temporary increase, in the near future, in relocation moves for separated and realigned staff, but we are determined to try and minimize these moves and disruptions.

Our Commitment to People Leaving the Force

We owe a great deal to all those who have chosen to serve in the Department of Defense, and we have a responsibility to treat those who separate from DoD with the compassion and fairness they deserve. Several programs are intended to minimize involuntary separations and ease any separations that must take place.

Voluntary Separation Initiatives (VSI) and Special Separation Benefit (SSB) Programs. DoD ended FY 1992 with an active-duty military end-strength some 17 percent, or 366,000, below the peak end-strength of 2,174,000 in FY 1987. We must still draw down by approximately 400,000 more people, to 1.4 million by FY 1999. Until now, most of the reductions have been achieved by attrition, reduced accessions, and our very successful voluntary separation programs. More than 22,000 service members have already applied for separation under the VSI and SSB programs this year; this is more than half of our FY 1993 goal of 30,000. We will continue to use these programs wherever possible to achieve further necessary personnel reductions.

Early Retirement Authority. While the VSI and SSB programs are working well for members with 6 to 15 years of service, these programs have not induced large numbers of DoD personnel with more than 15 years of service to separate. Temporary early retirement authority will complement other programs and help us shape the 15- to 20-year segment of the force. The goal of this program is to supplement the voluntary separation programs so that our forces can maintain an appropriate mix of skills and experience as they are reduced in size. The temporary early retirement program will help reduce those overstrength skills, grades, and year groups and minimize involuntary separations.

Reserve Component Separation Initiatives. The reserve component transition initiatives enacted by the Congress and implemented by DoD include special separation pay for those with more than 20 years of service, early qualification for retirement pay (at age 60) for those with 15 to 20 years' service, separation pay for those with 6 to 15 years of service, post-separation use of commissaries and exchanges, continuation of Montgomery G.I. Bill educational assistance, and VSI/SSB and temporary early retirement programs for selected full-time reservists.

Civilian Separation Incentives. Like our plans for active military and reserve personnel separations, plans for civilian separations will minimize involuntary departures. DoD intends to reach the civilian reduction level first by attrition, then by using the authorized buyout provisions recently passed by the Congress, and last, by involuntary separations. We will also continue to adhere to civilian hiring restrictions already in place, replacing two civilian employees for every five employees who leave.

Transition Assistance Programs. There are other programs being undertaken to ease the transition for personnel leaving DoD:

- **Extended medical care.** We will pay the government portion of health insurance premiums for an additional 18 months beyond the release date of employees who are involuntarily separated.

- **Separation assistance counseling.** There are several programs available to help departing DoD personnel find new jobs. The Verification Program provides a form with a service member's military experience, training history, associated civilian-equivalent job titles, and educational credit information. Another automated program registers mini-resumes of civilian employees, military members and their spouses in the Defense Outplacement Referral System. Through this program, the Department, in cooperation with the Office of Personnel Management, refers the resumes of DoD personnel to federal and other public and private-sector employers. The Defense Priority Placement Program (PPP) remains the backbone of our internal civilian placement efforts, providing fine-tuned PPP policies that are responsive to employee needs. Registrants in this automated program average about 7,000 per month, and we place approximately 500 employees monthly. To accommodate the transition needs of individuals stationed overseas, DoD has sponsored job fairs in Europe and Asia.

- **Relocation assistance.** This is a Congressionally-directed program that operates through the family centers at military installations. It provides planning assistance, community information, and emergency aid during the relocation process.

- **"Soft landings" for troops.** To address the transition needs of military personnel, DoD civilians, and defense contractors and, at the same time, place talented individuals in public service jobs, we are establishing a program to encourage separated individuals to go into teaching, law enforcement, health care, and environmental restoration and preservation. We are also establishing a public and community service jobs registry containing both resumes and job vacancy notices.

- **Retraining.** DoD is helping displaced military, civilian, and contractor personnel prepare for new employment by working with other federal agencies to provide employment and retraining services.

- **Department of Veterans Affairs.** We have also provided significant funding to the Department of

Veterans Affairs to implement the Service Members Occupational Conversion and Training Act, which will provide training to veterans in need of additional civilian job skills.

Assistance to the Larger Defense Community

We have established the Defense Reinvestment Initiative to aid the people and communities that have long supported our national defense but are now losing defense facilities in their area. This initiative, in conjunction with others from DoD and other government agencies, will help affected communities adjust to the defense drawdown.

- **Base Closure and Redevelopment.** DoD is working with the Commission on National and Community Service to explore how the Civilian Community Corps can assist us in addressing the needs of communities where bases are being closed. Examples might include (nontoxic) environmental base cleanup activities, installation maintenance, conservation programs, and wildlife protection.

- **Continued Commitment to Society.** To further address the school dropout problem, the Department will fund a Civilian Youth Opportunities pilot program, administered by the National Guard. The program will provide military-based training and community service opportunities to improve the life skills and employment potential of youth who drop out of school. We also are implementing a pilot program through the National Guard to provide health care services to medically underserved communities and populations. DoD has doubled the size of the Junior Reserve Officers Training Corps (JROTC) program, which uses retired defense personnel to teach leadership, citizenship, and responsibility to high school students. Combining JROTC instruction with vocational training and academic instruction, we have developed the JROTC Career Academy Program directed toward at-risk youth in inner-city high schools.

- **Demonstration Programs in Job Development.** DoD is working with the Department of Labor to assist

employees adversely affected by base closures and realignments and contractor cutbacks. We have transferred \$100 million of the \$150 million authorized to the Department of Labor for the Defense Conversion Adjustment Program to help displaced defense workers prepare for and find new jobs, and to provide them with relocation and other support services, such as transportation and child care. In addition, three base closure locations (Castle Air Force Base, Philadelphia Naval Shipyard, and Williams Air Force Base) were among 12 locales awarded demonstration grants to provide job development and job search services beyond those traditionally available through the Labor Department program.

Defense Diversification Program. Additional funds, authorized and appropriated in FY 1993, have been transferred to the Department of Labor for an expanded assistance initiative, called the Defense Diversification Program. New provisions include access to training assistance 24 months in advance for DoD civilians at bases slated for closure and needs-related stipends for displaced defense workers while on training.

Department of Commerce. The Department also transferred \$50 million appropriated in FY 1991 and \$80 million appropriated in FY 1993 to the Economic Development Administration of the Department of Commerce to help communities implement their adjustment plans.

SECTION VII: DEFENSE FOUNDATIONS

ROLES AND MISSIONS

To ensure that our armed forces are properly aligned to meet future challenges, we must continually evaluate the division of labor — the allocation of roles, missions, and functions — among the services and combatant commands.

This section describes the Bottom-Up Review of:

- **Roles.** The broad and enduring purposes for which the military services were established by Congress in law;
- **Missions.** The tasks assigned by the President or Secretary of Defense to the combatant commanders; and
- **Functions.** The specific responsibilities assigned by the President or the Secretary of Defense to enable the services to fulfill their legally established roles.

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 requires the Chairman of the Joint Chiefs of Staff (JCS) to “periodically recommend such changes in the assignment of functions (or roles and missions) as the Chairman considers necessary to achieve maximum effectiveness of the Armed Forces.”

In March, Secretary Aspin forwarded to the Congress the Chairman of the Joint Chiefs of Staff’s *Report on the Roles, Missions, and Functions of the Armed Forces of the United States* — the second such version of that report since Goldwater-Nichols became law. In his letter transmitting the report and in a subsequent directive issued throughout DoD in April, the Secretary provided his decisions on the Chairman’s recommendations. Within OSD, the services, and the Joint Staff, 31 working groups were formed to implement the Secretary’s decisions. Deliberations commenced immediately. In most cases, 60-day implementation plans or 90-day “fast track” study results were for-

warded to the Secretary to keep him apprised of progress on the actions.

The most encompassing action taken — one which has broad implications for the conduct of evolving, post-Cold War missions such as peacekeeping — involves placing the majority of U.S.-based forces, including the Atlantic Fleet, Forces Command, Air Combat Command, and Marine Forces Atlantic, under a single, unified combatant command. The U.S. Atlantic Command was selected because it is particularly well-suited to assume this new mission. The principal purpose of the new command is to ensure joint training and readiness of forces stationed in the United States. As a result of this change, forces would already be accustomed to operating together and could therefore be deployed efficiently to overseas locations when crises arise. Consequently, overseas CINCs will be able to focus more on in-theater operations and less on deployment readiness concerns.

In addition to developing jointly trained forces, the U.S. Atlantic Command would be assigned other important new functional responsibilities:

- Supporting U.N. peacekeeping operations and training units for that purpose.
- Assisting with disaster relief operations in the United States and fulfilling other requirements for military support to civil authorities when requested by state governors and as directed by the President.
- Planning the land defense of the United States.
- Improving joint tactics, techniques, and procedures.
- Recommending and testing joint doctrine.

Depot maintenance represents another area examined in the most recent Roles and Missions Report

where important follow-on work is underway to eliminate redundancies. Government depots comprise a huge organization of some 130,000 civilians and 2,000 military personnel spread across 30 facilities. Today, with the ongoing reductions in the U.S. force structure, DoD's depot capacity exceeds requirements by 25 to 50 percent. The Base Realignment and Closure (BRAC) Commission recommended closing seven depots and realigning three others. A DoD working group is reviewing additional consolidations and new management schemes. The goal is to reduce depot capacity significantly so as to align it more closely with our reduced force structure and overall requirements.

Another action resulting from the Roles and Missions Report and the Secretary of Defense's directive is the establishment of an Executive Agent management structure for DoD's vast training, test, and evaluation (TT&E) establishment. The services have agreed to pool their TT&E infrastructures and resources under a joint board of directors comprising senior officers from the four services. This action will streamline and vastly improve the efficiency of this large complex of facilities and ranges.

The April directive also identified five areas for further study in conjunction with the Bottom-Up Review (four of which are addressed in this section):

- Expeditionary ground force roles and requirements.
- Service air power roles and force requirements.
- Service contributions to meeting overseas presence needs.
- Service responsibilities in new mission areas, such as peacekeeping.
- Responsibilities assigned to the active and reserve components (examined in the next section).

In each of these areas, the focus was on preserving the benefits that derive from competition among the services, while eliminating unnecessary and duplica-

tive practices. As Secretary Aspin and the Chairman of the JCS have both stated, fielding unique but complementary capabilities in different military services can be an efficient use of resources. It may be necessary to assign a particular function to more than one service in order to ensure that critical capabilities are available when and where they are needed. Moreover, cross-service diversity can foster greater innovation, seriously complicate enemy planning, and hedge against possible breakthroughs in countering a particular capability.

The Bottom-Up Review determined that it is necessary to maintain multiservice capabilities in all of the areas listed above. However, where those capabilities involve the use of similar weapon systems or platforms, special attention must be given to ensuring that the services adopt common approaches, to the extent possible, in several areas. These include:

- Developing standard tactics and techniques, adopting common doctrinal approaches, and carrying out joint training where coordination with other force elements is required.
- Consolidating support and training infrastructures to reduce excess capacity.
- Exploiting opportunities to develop and field common weapon systems and subsystems.

Expeditionary Ground Forces

As was discussed in Section IV, the Bottom-Up Review assessed a number of alternative force mixes weighted toward ground, sea, or air components, but validated the need for a balanced force that is highly responsive to a broad array of possible contingencies.

The review of expeditionary ground force requirements included the full range of contingency and expeditionary forces: active Army heavy (armor and mechanized), light, and specialized airborne and air assault forces; all Marine Corps forces, including the organic contributions of the Marine air component; and special operations forces. These forces were

examined for their contributions under a range of circumstances and conditions.

Under our proposed defense strategy and force structure, expeditionary ground force capabilities appear sufficient for any single contingency, large or small. However, if we had to deal with more than one contingency at a time, such a scenario would place extraordinary demands on certain elements of the force, such as Army airborne and air assault forces, Marine expeditionary forces, and some special operations forces.

Smaller-scale operations also place special requirements on "light" forces and on special operations forces. Threat and terrain conditions and the lack of available infrastructure often exclude the use of armor or mechanized forces in such circumstances. So-called light forces (Army infantry, airborne, and air assault) and medium forces (Marine air-ground task forces) may be required to perform a variety of functions, including forcible entry, assuming access is contested. For contingencies extending over lengthy periods of time, consideration must also be given to providing an adequate rotation base. Reserve component forces might be called upon in these situations.

Adoption of new missions such as peacekeeping, humanitarian assistance, and disaster relief, or a significant expansion of existing missions such as increased amphibious ready group presence in maritime regions, has the potential to place far greater demands on the operating and deployment tempos (time deployed) of our forces. Combat force contributions to peacekeeping operations, for example, will in most cases be infantry and SOF-intensive and will likely involve force commitments of an extended duration. However, planned reductions in light infantry forces and rotation factors will limit the size and number of commitments these forces can support. Moreover, once committed to peacekeeping operations, these forces will not be readily available to respond to crises elsewhere. Again, we are exploring greater use of reserve component forces as a means of relieving the burden on our active forces and increasing our flexibility to perform such operations.

Theater Air Operations

The Bottom-Up Review's assessment of theater air operations drew heavily on Joint Staff analyses exploring the contributions of various service air components under a variety of scenarios and circumstances. However, some independent modeling was conducted within OSD which looked specifically at the capabilities of modern munitions against large armored forces.

As with ground force operations, theater air operations require a careful sequencing of forces in the early stages of conflict. If control of airspace is contested, air superiority must first be established. When airspace is contested in maritime areas or when air bases ashore are not available, Marine and Navy fighter aircraft play a crucial role. In certain circumstances, Marine and Navy air elements, along with long-range bombers, will be the only sources of theater air power available. In contingencies where access to local land-based facilities is well assured and logistics support can be maintained, land-based air-superiority aircraft will combine with Navy and Marine tactical aircraft to provide the most capable mix of forces possible. Joint Staff war-gaming analysts explored air-superiority requirements against a variety of potential threats. In all cases, land- and sea-based air-superiority aircraft were found mutually supportive and necessary.

Interdiction operations and attacks on strategic targets could begin almost immediately with long-range missiles, stealth aircraft, and aircraft capable of delivering standoff weapons. Once air superiority was assured, emphasis would be placed on interdiction efforts. Strike platforms from all services would contribute, adding confusion to enemy planning and overwhelming remaining enemy air defenses. Bombers could play especially important roles in the early stages of a conflict, once outfitted for delivery of precision-guided munitions.

Engaged ground forces will require close air support. Air Force, Navy, and Marine fixed-wing attack aircraft and Army and Marine attack helicopters will provide this support. In implementing another recommendation of the recent Roles and Missions Report,

joint doctrine is being updated to better account for the contributions of attack helicopters. Work must continue in the area of integrating long-range rocket artillery fire with air-delivered munitions.

The danger presented by the proliferation of weapons of mass destruction, particularly nuclear weapons, places additional demands on theater aviation. First, development of conventional counterforce capabilities will be necessary. Second, while we believe the Navy and Marine Corps can prudently do away with the tactical nuclear mission of their air components, a limited number of Air Force multirole aircraft must remain capable of delivering theater nuclear weapons.

One other promising change in the area of theater aviation is the integration of Navy and Marine Corps fixed-wing fighter/attack aircraft. Three Marine Corps F/A-18 squadrons and one EA-6B squadron will participate in aircraft carrier deployments. We will also examine further integration of Marine Corps fighter/attack squadrons in support of carrier operations, while ensuring that such integration does not disrupt the integrity of the Marine air-ground task force concept.

On the programmatic side of theater air operations, the Bottom-Up Review analyzed the potential for joint Air Force-Navy development of single aircraft types and components to meet the requirements of both services at substantial cost savings. As a result, the Joint Advanced Strike Technology Program has been launched with the aim of achieving far greater commonality of components and "jointness" in the next generation of Navy and Air Force strike aircraft.

While it is clear that all services will retain important air power roles, more work must be done to ensure that air and missile contributions are better integrated. This will remain a critical area for ongoing analysis.

Overseas Presence

Overseas presence requirements are apportioned among the services according to the needs of regional

commanders. Given the diversity of situations and locations where U.S. interests are represented in peacetime, multiservice capabilities are crucial to maintaining adequate overseas presence as the overall size of our force is reduced.

Throughout the Cold War era, land-based ground and air forces constituted the majority of U.S. forces stationed overseas. Guided by a strategy of forward defense and containment, these forces were deployed in significant numbers and were supported by a relatively large forward base infrastructure.

Today, our overseas presence is both declining and being restructured in response to the changed strategic environment. In some regions, such as Europe, our land-based presence, both troops and bases, is declining sharply. In other regions, like the Pacific, where we had fewer forward-stationed forces to begin with, the decline is less dramatic. In still other regions, such as the Persian Gulf, the post-Cold War period has brought with it more, not fewer, demands for presence.

The decline in the number of U.S. forces permanently stationed abroad and the accompanying draw-down in bases and facilities to which we have historically had access means that our remaining overseas presence forces and facilities take on added significance in implementing our regionally-oriented defense strategy.

We will continue to examine innovative concepts to fulfill our commitments as we reduce our overall overseas presence, ensuring, for example, that increased operating tempos and a shrinking rotation base do not degrade combat readiness. A number of these concepts — including a reserve/training carrier, adaptive and joint force packages, and combined exercises of land, air, and naval forces with U.S. friends and allies — have already been discussed. Over time and in consultation with our friends and allies, adjustments will continue to be made in our overseas presence that recognize the limitations of a smaller U.S. force structure while continuing to serve our interests abroad.

Service Roles in New Mission Areas

Peacekeeping, peace enforcement, humanitarian assistance, and disaster relief operations place new demands on U.S. armed forces and require some redefinition of missions and functions, with an attendant impact on resource allocation. Of these potential missions, peacekeeping and peace enforcement operations will be the most demanding. Here again, the flexibility of complementary, multiservice capabilities is a tremendous asset.

As noted earlier, one prominent step in our response to this new requirement has been to make the U.S. Atlantic Command responsible for evaluating and refining joint and combined doctrine for peacekeeping and other peace support operations and for developing joint training programs and exercises. In terms of the distribution of other roles and missions, the military services will retain responsibility for individual and unit training and general leadership preparation for peace support operations, while regional commanders will be responsible for operational and contingency planning.

Force planning and the associated force structure for peace enforcement operations will resemble those for major (or lesser) regional conflicts, as was discussed in Section III. Peace enforcement is a form of armed combat requiring tailored forces from all components, as determined by a regional commander. Service functions in these types of operations will differ little from those required for other combat operations.

Planning for peacekeeping requires different techniques and a different mix of combat and support forces. Effective multinational staff and leader training and familiarity with certain noncombat techniques

(such as negotiation and integration of nongovernmental and private volunteer organizations into the overall effort) will be critical to the outcome.

Peacekeeping operations typically will also require heavier concentrations of combat support and combat service support forces than is the case for combat operations. Emphasis will be placed on medical, engineering, transportation, and command and control capabilities. Depending on the anticipated level of U.S. participation in peacekeeping operations, the mix of active and reserve forces in these areas may need review.

Combat forces for peacekeeping will usually include both ground and air components, as well as maritime forces if blockades are to be enforced or naval interdiction is required. Ground forces will likely be infantry-intensive, depending upon the scenario, and could, in some cases, severely strain overall "light" force capabilities. Air contributions will mostly involve supply and reconnaissance assets. As a follow-on to the Bottom-Up Review, we will continue to evaluate overall force requirements for peace support operations.

A Concluding Comment

The Bottom-Up Review has provided an important opportunity to further clarify service roles, missions, and functions in selected areas and, therefore, build on the recommendations of the Roles and Missions Report. In each of the five areas examined, the need for multiservice capabilities was reaffirmed. However, several important matters raised in the Bottom-Up Review will require further attention as the process of defining America's post-Cold War security needs continues in the months ahead.

SECTION VII: DEFENSE FOUNDATIONS

RESERVE COMPONENT FORCES

Reserve component forces are an integral part of our armed forces and are essential to the implementation of our defense strategy. Reserve forces were key to our success in the Persian Gulf war, clearly demonstrating their commitment, dedication, and professionalism. After Iraq's invasion of Kuwait, reserve volunteers from all of the services were among the first military personnel to deploy — literally thousands of reservists volunteered to be activated in the initial days of the operation. The Persian Gulf War, which required the largest mobilization and deployment of the reserve component since the Korean conflict, was also the first major test of our Total Force policy, instituted in 1973 to integrate the active and reserve components of our armed forces more closely with one another.

Since the inception of the Total Force policy, our National Guard and reserve forces have been sized and structured in much the same way as our active forces — which, during the Cold War years, required that they be able to meet the demands of a global conflict with the Soviet Union and the Warsaw Pact. During the 1980s, major improvements were made in the readiness of reserve forces for wartime missions. The reserve component structure also was expanded significantly — the Selected Reserve (those units and individuals within the overall Ready Reserve structure designated as essential to wartime missions) increased by some 35 percent, to 1,150,000 personnel from 850,000.

Adapting the Reserve Components to Address New Dangers

Today, new regional dangers have replaced the global Soviet threat and, as with our active forces, we must adapt the reserve components to meet these new challenges. Our approach is to seek “compensating leverage”; that is, to use the reserve components to reduce the risks and control the costs of smaller active forces. Compensating leverage does not mean maintaining larger Guard and reserve forces. Rather, it

means making smarter use of the reserve component forces that we have by adapting them to new requirements, assigning them missions that properly utilize their strengths, and funding them at a level consistent with what will be expected of them if we have to use them during a crisis or war.

One of the most important tasks is to define explicitly the roles and missions we expect the reserve components to perform in the new security environment. During regional contingencies, Guard and reserve forces will continue to provide — as they have in the past — significant support forces, many of which would deploy in the early days of a conflict. Reserve component combat forces will both augment and reinforce deployed active forces and backfill for active forces deployed to a contingency from other critical regions.

Guard and reserve forces also will help promote international stability and security during peacekeeping, peace enforcement, and humanitarian assistance operations. Missions appropriate to the reserve components include support for active forces engaged in such operations, including strategic airlift, service support, civil affairs, and other capabilities. During prolonged operations, or when active forces redeploy during a major regional conflict, reserve forces are available to provide a rotational or replacement base.

Finally, the Army and Air National Guard will continue to serve as the first line of defense for domestic emergencies. They will provide forces to respond to natural disasters, domestic unrest, and other threats to domestic tranquility. They also will provide air defense of the United States and protect U.S. airspace sovereignty.

In some areas, the reserve component force structure is well suited to future needs. In others, too much force structure exists and organizations are not prop-

erly organized, trained, or equipped to undertake new missions. Described below, for each of the services, are the changes we intend to make in the reserve components to adapt them to the new environment.

Air Force Reserve Forces

Increased investments in the Air Force Reserve and the Air National Guard during the last two decades have produced forces able to meet the demanding missions given to them. All of the roles already assigned to the Air Reserve components, from aerial refueling to airlift to air combat, are well suited to our future needs. We also intend to assign new or expanded roles to the Air Reserve components in several important areas. At the same time, the end of the Cold War has made necessary some reductions in these force elements.

The Air National Guard will assume a larger share of the air defense mission in the United States, including manning and operating 1st Air Force Headquarters and all U.S. regional and sector operations centers. The total number of Air National Guard air defense interceptor squadrons and aircraft will be reduced in light of the virtual elimination of the long-range bomber threat.

Air National Guard and Air Force Reserve units will also assume an increased share of aerial-refueling and airlift operations — a task they have performed so well in past operations, like Desert Shield/Desert Storm. Also, for the first time, B-52 and B-1 heavy bombers will be transferred to Air National Guard and Air Reserve units. Finally, both the Air National Guard and the Air Force Reserve will undertake occasional short-duration peacetime fighter deployments overseas to help reduce personnel demands on the active Air Force and to meet surge requirements.

Finally, there will be reductions in Air Reserve component fighter wings. As a result of the Bottom-Up Review, it was determined that 20 fighter wings would be required to fight and win two nearly simultaneous

major regional conflicts. This allows for a significant reduction in the total number of U.S. fighter wings from the Cold War level. At the same time, peacetime presence needs, including an active rotation base, require us to maintain a minimum of 13 wings in the active force. Thus, the active Air Force will be reduced from 22 general purpose fighter wings in 1991 to 13 wings, and the reserve force will be reduced from 12 to seven wings, along with a restructuring and reduction of selected support elements. The resulting active-reserve mix will help reduce costs while maintaining adequate levels of readiness, overseas presence, and warfighting capability across the entire Air Force.

Naval Reserve Forces

The Naval Reserve has many units that simply are not needed for regional contingencies. During the Cold War, a substantial number of Naval Reserve ship augmentation units were maintained to increase manning to wartime requirements and to replace battle casualties. Now that new technology has automated many ship functions and the threat posed by a blue-water Soviet navy has disappeared, these requirements have declined significantly.

Some units will be reoriented to missions that support a high tempo of peacetime naval operations, while providing a surge capability to augment the active force during contingencies. The resulting Naval Reserve will be smaller, more specialized, and more immediately effective in responding to a range of potential operations, including the needs of two nearly simultaneous conflicts.

The demanding peacetime tempo of naval forces means most ships must be manned by active-duty crews. Ships will be placed in the Naval Reserve Fleet (NRF) where the need for a high tempo of peacetime operations is limited. For example, we will be substantially increasing the Naval Reserve's role in mine warfare by placing additional minesweepers and mine countermeasure ships in the Naval Reserve Fleet. We

also expect to retain about ten frigates (FFG-7s) in the NRF.

In addition, we are proposing a major innovation in the force structure for Naval Reserve ships — placing an aircraft carrier in reserve status. In peacetime, this carrier, with a largely full-time crew, would conduct training missions for active and reserve aviators, and could be available for limited deployments overseas. In a war that called for a very large force and mobilization, the reserve carrier and its air wing could be deployed to a conflict theater relatively expeditiously.

A single reserve carrier air wing composed of Navy and Marine Corps squadrons will be created. The Naval Air Reserve will also have significant responsibilities in the areas of antisubmarine warfare and countermine operations. For example, the Navy intends to integrate active and reserve mine countermeasure helicopter squadrons.

Marine Corps Reserve Forces

The Marine Corps Reserve is a relatively small force — representing only 19 percent of total Marine Corps end-strength. It is characterized by high prior-service officer accessions and the integration of Marine Corps Reserve combat units at the smaller unit level. Such characteristics have given the Marine Corps Reserve an ability to deploy and integrate itself effectively with active forces with minimal “train-up” time following mobilization. For example, during Operation Desert Storm, more than 50 percent of the Marine Corps Reserve was activated and employed, including some two-thirds of the reserve combat structure.

Marine Corps Reserve forces, which have long been designed and structured to augment and reinforce expeditionary operations in distant regions, are well suited to the challenges of the post-Cold War era and require only limited changes in their composition. We plan to retain a Marine Corps Reserve end-strength of

about 42,000, slightly larger than planned under the Base Force, to ensure that the Marine Corps Reserve can fulfill both its augmentation and reinforcement roles.

Army Reserve Component Forces

Achieving an Army total force capable of meeting new security requirements demands adapting the Army National Guard and the Army Reserve to the new defense strategy, improving and accelerating the process of readying combat forces for deployment, and utilizing the Army Guard and Reserve in areas where they have performed effectively and responsively in the past. Currently, there are about 700,000 personnel in the U.S. Army Reserve and National Guard. As the reserve structure is realigned to support the new defense strategy, end-strength in the Army reserve components will decline to about 575,000 by 1999.

Support Forces. Combat support and combat service support (CS and CSS) units in the Army Reserve are able to deploy rapidly and be integrated effectively into the active force — a fact that was demonstrated clearly during the Persian Gulf conflict. Our reliance on the reserves for CS and CSS units in the future will depend on how quickly we can activate them in a crisis, as well as on the size of the residual active-duty support forces needed for peacetime missions. We plan to expand the role of Army reserve component CS and CSS units in key areas to provide additional support for Army combat units and other U.S. forces involved in combat operations.

Reorganizing the Army National Guard. The Army National Guard will transition to a combat force of about 37 brigades, including 15 enhanced readiness National Guard brigades, to execute the strategy of the Bottom-Up Review, to provide strategic insurance, and to support civil authorities. Within the overall force structure, the focus will be on the readiness initiatives directed toward the 15 enhanced readiness brigades as well as combat support and combat service

support needed to execute the strategy of winning two nearly simultaneous major regional contingencies.

The 15 enhanced readiness Army National Guard brigades will be organized and resourced so that they can be mobilized, trained, and deployed more quickly to the fast-evolving regional conflicts that we expect in the future. These brigades will be able to reinforce active combat units in a crisis. The goal is to have these brigades ready to begin deployment in 90 days.

The other Army National Guard combat forces, maintained at lower readiness, are needed as well for:

- **Extended Crises.** The warfighting analysis of the Bottom-Up Review focused on regional crises where an enemy invasion of its neighbor is countered by an early American response that results in a quick and decisive military victory for the United States and its allies. In cases where a large scale American deployment to a region successfully deters an invasion but requires forces to remain in place over an extended period, additional Army National Guard combat units will provide the basis for the rotational forces.

- **Peace Operations.** The United States should have the option to provide forces to engage in peace-keeping or peace enforcement when it is in the country's interest. Generally, active duty forces would be used in the initial stages of such operations. Protracted commitments to peace operations could lower the overall readiness of U.S. active duty forces over time, and in turn, reduce our ability to fulfill our strategy to be able to win two nearly simultaneous major regional conflicts. To avoid such a path to decreased readiness, the Army Guard and Reserve forces must be prepared to share the burden of conducting these operations.

- **Deterrent Hedge.** The collapse of the Soviet Union has greatly reduced the imminent threat to U.S. vital interests in Europe and the Far East. The reduced threat has permitted the Defense Department to make significant reductions in force structure and military

end-strengths of the Total Force (both active and reserve). However, it remains prudent to maintain a hedge against the possible failure of democratic reforms in Russia, Ukraine, and elsewhere in the world. The additional reserve component force structure provides a hedge that could form the basis of an expanded American force structure and serve as a deterrent to future adversarial regimes that could threaten U.S. interests.

- **Domestic Missions.** In addition to the defense missions discussed above, Army National Guard and reserve forces are called upon to meet domestic dangers such as natural disasters and civil unrest. Substantial numbers of reserves must be available during both peacetime and wartime to support civil authorities in responding to domestic crises. The Army National Guard and reserve force structure provides added capability to respond to external conflicts and to support civil authorities at home.

Readiness and Training Initiatives

A series of readiness and training improvements is necessary to ensure that the reserve components are able to meet the demands of the new defense strategy. Improvements are particularly necessary in the Army because of the demanding roles that Army National Guard and Army Reserve forces may be called upon to perform.

During the Persian Gulf War, several National Guard brigades were mobilized, but the needed post-mobilization training of those brigades was not accomplished as quickly as had been hoped or expected. Important lessons about readiness and training were learned from this experience.

Following the Gulf War, the Army's active and reserve components initiated a series of efforts reflecting the experiences of that conflict — the Army's Bold Shift program, the Army National Guard's Project

Standard Bearer, and the Army Reserve's Project Prime. Title XI of the 1993 Defense Appropriations Act added a series of requirements to further improve the deployability of individual Guard members, to sharpen the emphasis on unit and leadership training in the National Guard, to strengthen the capability assessments of National Guard units, and to increase the compatibility of active units with Guard units.

To help ensure that Guard and reserve units can indeed be available when we plan for them to be, we will be continuing a number of initiatives and undertaking some new ones to alleviate deficiencies in Guard and reserve training and combat readiness that were identified during the Persian Gulf War.

- **Reserve equipment initiative.** Adequate equipment is a crucial part of readiness. We will formulate our plans and budgets in order to fulfill the reserve components' legitimate equipment needs — in the Army and the other services as well. The Department will develop a balanced program of new procurement and redistribution to provide needed equipment.

- **Full-time support for the Army Reserve.** We are increasing the percentage of full-time support personnel in the Army Reserve component. These personnel perform key support functions — administration, maintenance, and so forth — enabling reserve personnel to focus their limited training time on required military skills.

- **Pre-mobilization preparations.** On strategic warning, several measures can be taken to improve the readiness of combat forces without mobilizing them. These include filling equipment shortfalls, completing school training of all personnel, providing two weekends of drill training per month, and providing a two- to three-week training period after six months.

- **Post-mobilization training.** Currently, only the National Training Center and a few other sites are able to provide post-mobilization training to National Guard

combat brigades, if such training is needed. This limits our ability to call up and train more than a few brigades in a crisis. The Army, recognizing this deficiency, is creating several "readiness divisions" to assist with the training of reserve component units during peacetime and crises. These divisions will contain active Army, Army National Guard, and Army Reserve personnel, and will provide the peacetime and post-mobilization training assistance needed by reserve component combat and support units.

Army Guard and Reserve units must be trained and ready to fight when called to active duty. The initiatives and restructuring we are proposing are designed to ensure that is the case. After these initiatives have been implemented and in place for some time, they will need to be evaluated carefully to determine whether the readiness achieved is satisfactory or further improvements are needed. We will also need to continue to evaluate the reserve component structure against evolving warfighting requirements.

Making the Force More Accessible

As DoD becomes more reliant upon the contributions of the reserve components, ensuring better access to Guard and reserve forces takes on increasing importance. Our concerns span the entire spectrum of needs: wartime contingencies, domestic emergencies, and peacetime operations.

We are examining the adequacy of existing legislation and have submitted a request for two changes to Title 10, USC 673b. We have asked the Congress to amend that provision of law to give us access to the reserve component for 180 days plus an extension of an additional 180 days, versus the 90 + 90 days provided under current law. We have also asked that the Secretary of Defense have the authority to call up 25,000 people if needed to support deployment operations during the early stages of a conflict.

The Department of Defense has formed a Reserve Component Accessibility Steering Group which will identify and develop solutions for a full range of accessibility issues: legislative and regulatory changes; mobilization policy guidance; better ways to use volunteers; and methods to meet domestic mission needs more effectively. In addition, accessibility for domestic missions of National Guard forces could be im-

proved by implementing recent proposals for bilateral and multilateral agreements for cooperation among states.

Our ultimate objective, of course, is to assure the availability of reserve component forces when needed, while ensuring that we do not overextend our call on our citizen-soldiers.

SECTION VII: DEFENSE FOUNDATIONS

INFRASTRUCTURE

Infrastructure is the foundation upon which our military strength is built. It includes all DoD activities other than those directly associated with operational forces, intelligence, strategic defense, and applied research and development.

For example, in FY 1994, infrastructure activities will account for \$160 billion in appropriated and revolving funds, or approximately 59 percent of DoD total obligational authority.

Infrastructure activities fall into seven broad categories:

- **Central Logistics** — includes depot maintenance, supply operations, and transportation. This is the largest functional area.
- **Central Medical** — includes all DoD medical activities except those directly associated with the readiness mission. CHAMPUS and the military medical treatment facilities make up most of this category.
- **Central Personnel** — includes all permanent change-of-station costs, recruiting and advertising

expenditures, dependent support programs, various public relations functions, and assorted other personnel activities.

- **Central Training** — includes only formal training activities, not the larger costs of unit training and exercises.
- **Science and Technology (S&T), DoD Labs, and Acquisition Management** — includes primarily S&T funding and oversight of DoD labs.
- **Installation Support** — includes costs driven by the number and size of DoD installations.
- **Force Management** — includes management headquarters, some defense agencies, and some aspects of command, control, communications, and intelligence (C3I).

As indicated in Figure 13, logistics represents the largest share of infrastructure expenditures, claiming 40 percent of the total, followed by installation support, with a 17 percent share.

Infrastructure Categories (As percentage of \$160 billion in FY 1994 budget)

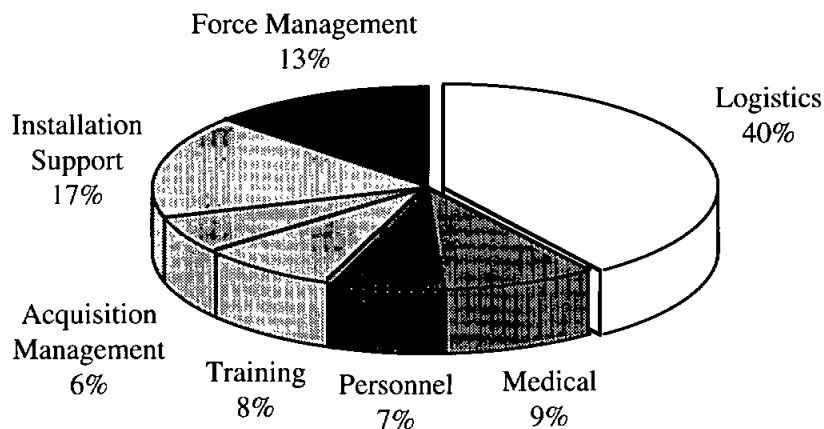


Figure 13

Infrastructure costs fall into two categories: those that are sensitive to changes in the overall force structure and those that are not affected when the size of the force is reduced. Our objective in the Bottom-Up Review was to identify potential savings and to launch a longer-term process of reducing and streamlining DoD's infrastructure without harming readiness.

Approximately 40 percent of infrastructure costs are tied directly to force structure. Examples include training, supply, and transportation costs. We will, of course, realize savings in these areas as our forces are reduced. Further opportunities for savings can be derived from supporting our operational forces more efficiently.

A detailed analysis of cost savings that could be realized as a result of force downsizing alone was conducted as part of the Bottom-Up Review. Since decisions on the final force structure were not available at the time the analysis was performed, a notional force was used. The analysis suggested that DoD should see direct infrastructure savings of between \$10 billion and \$11 billion resulting directly from the force draw-down.

The Bottom-Up Review also examined ways to obtain substantial savings in areas of infrastructure where costs have traditionally been seen as relatively fixed. Savings in these areas will require changing the basic ways in which DoD does business. For example, about 50 percent of infrastructure costs are a product of policy decisions or statutory requirements and can be reduced only through changes in public law or DoD directives. These include elements of funding for military installations, family housing, military base operations, depot maintenance, and schools for DoD dependents, both in the United States and abroad.

One such area of potential savings is the realignment and closure of additional U.S. military bases and facilities. This is accomplished through the BRAC process. Implementation of BRAC-93 decisions is expected to result in a savings of about \$4 billion.

Another 10 percent of infrastructure costs are attributable to public law and policy decisions but are virtually impossible to reduce. Cutting expenditures

here would require extremely difficult and, in some cases, undesirable changes, such as Congressional action to rescind or rewrite U.S. environmental laws. Included in this category are most environmental restoration efforts (which involve myriad legal, regulatory, and policy constraints), various legal entitlements of current and former service members, and the obligation to provide medical benefits to dependents of active-duty personnel.

There are three general methods of reducing variable infrastructure costs. These include increased use of privatization for business operations, additional consolidations and expanded use of executive agents, and better business practices and incentives. There have been many attempts to reduce costs in these areas before, and such efforts must be encouraged and expanded. The potential for savings, however, differs significantly across functional categories.

Privatization of DoD operations can, in selected cases, provide cost savings. Transferring operations to the private sector could yield savings in such areas as maintenance, base operations, and concession functions. There are significant economies of scale that can be realized from consolidating certain functions, such as accounting services, and appointing executive agents for training and depot maintenance. Employing better business practices over a range of DoD activities will enable us to reduce infrastructure costs without cutting outputs.

The Bottom-Up Review has provided a detailed framework of options for reducing infrastructure costs. Just by reducing force size, savings of around \$10 billion to \$11 billion will be realized in the 40 percent of infrastructure costs that are directly tied to our operational force structure. Another \$4 billion in savings will be achieved with the implementation of BRAC-93 decisions. Further cost savings will come from changes in policy directives and, in some cases, public law, as we make adjustments with an eye toward privatization, consolidation of functions, and better business practices. We will pursue the maximum savings possible in each infrastructure category, while maintaining an adequate level and quality of infrastructure to support our forces.

SECTION VII: DEFENSE FOUNDATIONS

ENVIRONMENTAL SECURITY

In the post-Cold War era, DoD's approach to environmental problems must rest on two basic premises. First, our national security must include protection of the environment, and environmental concerns must be fully integrated into our defense policies. Second, to protect our nation we must also have a strong economy; protecting the environment and growing the economy must go hand in hand.

Environmental concerns are an integral part of U.S. national security policy because of the effect that environmental conditions have on economic and political stability, because of the growth in environmental costs as a share of the national security budget, and because of the loss of public trust caused by military noncompliance with environmental laws and regulations.

Reflecting the Clinton Administration's commitment to preserving and protecting the environment, the Department of Defense created a new Environmental Security Program with a mandate to ensure that appropriate environmental, safety, and health considerations are brought to bear in the development of national security policy; that the environment is protected in defense operations; and that our environmental stewardship is used to promote economic growth. This program is being pursued in partnership with other federal agencies, states, private industry, the public, and Congress.

This new program is based on a C³P² (C-cubed, P-squared) foundation, which stands for cleanup, compliance, conservation, and pollution prevention. The Department will establish goals and priorities in each of these areas and will establish measurable ways to demonstrate progress.

Over time, this program should provide DoD with a better environmental security strategy, better information and control systems for effective management, uniform cost-estimating methods within the Depart-

ment, an environmental security technology program directed toward user needs, and increased public involvement in environmental security efforts.

Threats to Environmental Security

The Department's national security mission includes performing defense operations in an environmentally responsible manner, deterring environmental threats that could lead to international instability, and when appropriate, applying military capabilities to mitigate environmental effects of natural disasters.

Environmental security threats are defined as conditions affecting human health, safety, or the environment that actually or potentially (1) impair the ability of DoD to prepare for and perform its national security mission or (2) create instabilities that can threaten U.S. national security.

The most notable environmental threats to U.S. security to which the Department must respond are: *global threats*, such as warming, ozone depletion, loss of biodiversity, and nuclear proliferation; *regional threats*, such as environmental terrorism, accidents or disasters, regional conflicts caused by scarcity or denial of resources, and cross-border and global contamination; and *national threats*, such as risks to public health and the environment from DoD activities, increasing restrictions on military operations, inefficient use of DoD resources, reduced weapon system performance, and erosion of public trust.

Program Objectives

The Bottom-Up Review evaluated each of the Department's environmental security programs in light of the following objectives: *reducing environmental risk* by minimizing threats to human health and safety; *ensuring full compliance* with U.S. environmental laws and regulations and with the Overseas Environ-

mental Baseline Guidance document; *enhancing cost-effectiveness* and reducing costs wherever possible; *targeting environmental technology* on the most serious problems and where research and development will achieve the highest payoffs; *improving U.S. public involvement and awareness* by conducting open, frequent, and meaningful public dialogues and information exchanges; and *producing measurable results* in performance, schedule, and cost. This includes reductions in environmental risks, protection of natural resources, compliance with environmental laws or regulations, and reductions in pollution levels.

New Directions Needed

The Department has stewardship for about 25 million acres of land around the world, and has identified more than 18,000 sites that may need to be cleaned up. Cleanup requirements include: fuels and solvents at about 60 percent of our sites, toxic and hazardous waste at about 30 percent, unexploded bombs and artillery shells at about 8 percent, and low-level nuclear waste at about 2 percent.

Based on its examination of environmental programs, the Bottom-Up Review identified the following objectives for DoD's environmental security strategy:

Cleanup programs must reflect a new "common sense" strategy that relates cleanup standards to planned land use; eliminates contamination "hot spots" and evaluates the balance of contaminated sites for application of environmental technologies; increases public involvement in decisionmaking; and achieves significant economies in the management of cleanup programs. We will complete preliminary assessments at all sites; mitigate contamination at all "hot spots"; consider future land use in developing cleanup strategies; and fully implement the President's "fast track" cleanup program at bases slated for closure.

Compliance programs need to improve our ability to identify, program, and budget for environmental security requirements and evaluate program execution; improve education and training to ensure full compliance; increase partnership efforts with federal

and state regulators and the public to achieve sustained compliance, including creation of regional DoD environmental offices; develop an investment strategy to upgrade the Department's infrastructure; and resolve deficiencies as soon as possible.

Conservation programs need to enable DoD to participate fully in the National Biological Survey and complete resource inventories of all DoD lands and waters; improve ecosystem management and protection of resources; and establish DoD-wide energy and resource conservation guidelines and incentives to reduce energy consumption.

Pollution prevention programs need to ensure that life-cycle environmental security costs and benefits are considered explicitly in acquisition and supply system decisions, and that incentives are provided to reduce sources of pollution and promote more efficient material and energy procurement and use, including reuse, recycling, and creating markets for recycled materials. Specifically, the Department will reduce non-mission-essential use of ozone-depleting substances and reduce toxic releases and the generation of solid and hazardous waste.

Technology development efforts need to meet widespread environmental needs with programs that yield quick results and have high payoffs. In addition, the Department must develop a system to determine technology priorities and eliminate overlapping funding; engage in technology partnerships to stimulate innovative technology development and promote dual use where appropriate; and improve technology transfers within and outside DoD, particularly technologies to characterize and clean up sites.

The Department also needs to redesign its budget preparation and execution tracking procedures for environmental security programs.

The new Environmental Security Program will ensure that both environmental threats and environmental protection are prominent parts of the defense program. Giving these issues the attention they deserve will be vital to our national security and to our economic growth in the years ahead.

SECTION VII: DEFENSE FOUNDATIONS

ACQUISITION REFORM

The Need for Reform

The DoD acquisition system developed and acquired the best weapons and support systems in the world. It was critical to fielding the quality armed forces the United States has today. However, just as we need to reshape our forces from the bottom up in response to the changed security environment, so must we restructure our acquisition system to compensate for the decline in available resources for defense investment and to exploit technological advances in the commercial sector of our economy more effectively.

In addition, certain oversight and regulatory practices that were adopted during the Cold War are no longer affordable or necessary today. The existing DoD acquisition system is based on outdated management philosophies and organizational structures. Our acquisition organization is segmented, overly specialized, and hierarchical. There are so many hand-offs of responsibility for any one acquisition program that accountability is difficult, and the ability of any one person or organization to change the process is small.

The current acquisition system has been shaped by myriad rules, regulations, and laws that were intended to protect the government, ensure fairness, check the government's authority over its suppliers, or further social objectives. However, while these laws and regulations were noble in intent, in practice they have often burdened the acquisition system unnecessarily, adding unnecessary costs to items produced by defense contractors, discouraging commercial contractors from selling to the government, and increasing DoD's management and control costs. Examples include:

- Regulations governing military specifications that were adopted to ensure that products would both meet users' needs and be purchased from the lowest bidder.

- Laws requiring DoD to use small businesses and buy only American-made products, which were enacted to further particular public interests.

- Oversight requirements both within DoD and over DoD contractors that have burgeoned in an effort to eliminate waste, fraud, or abuse of the system.

Today's rules and regulations are barriers to the use of commercial practices, the purchase of commercial products, and the integration of the defense and commercial industrial bases. Any attempt at acquisition reform must take the original intent of current regulations into consideration, but must also find ways to: (1) reassess their viability given expected DoD procurement changes or (2) where appropriate, modify laws and regulations to ensure that they protect the government's interest while fostering more effective and efficient acquisition procedures.

The Path to Reform

The DoD acquisition system should establish reasonable and affordable requirements and provide the most efficient, timely, and effective means of acquiring state-of-the-art goods and services to meet those requirements at the best value to the American taxpayer.

There are two goals that reform of the defense acquisition system can and must achieve immediately in order to succeed in our longer-term reform objectives:

- First, we must adopt commercial practices to the maximum extent possible to make DoD a better customer and to foster the integration of the defense and commercial industrial bases.

- Second, we must more closely link the systems requirements process to the operational plans and needs of the unified commands, as well as to the resource allocation process.

Integrating major parts of the defense industrial base with the commercial industrial base and having DoD adopt the best practices of today's commercial industries is the key to our reforms. We can no longer rely on a large defense industrial base consisting of companies who cater only to the needs of the military; our reduced defense spending will simply not support a separate defense industrial base with many companies largely isolated from the commercial sector.

Integrating the defense and industrial bases and making DoD a better customer will allow us to meet several key objectives:

- **Maintain "leading edge" technology.** In order to stay on the cutting edge of technology, we must look beyond our traditional defense contractors and sub-contractors. Modern weaponry relies heavily on advanced electronics, software, telecommunications, flexible manufacturing techniques, and other advanced technologies where commercial companies are often making the most significant advances.

- **Broaden the industrial base for DoD.** Because the defense-dedicated industrial base will necessarily shrink, it would probably not be sufficient to handle expanded requirements in a large-scale crisis. Broadening the base of potential suppliers will ensure that the United States has the capability to gear up production again should that become necessary.

- **Encourage innovation and reduce acquisition time.** Having a larger base to draw upon and making DoD a better customer will encourage innovation in products and practices, both in government and private industry; allow more flexible solutions to acquisition problems; and reduce the time it takes to acquire products and services.

- **Become more efficient.** A larger base of companies creates more competition, which in turn yields more efficient operations and reduces the time required to acquire products and services. Increased competition also allows the market to set and enforce fair prices. This will allow us to reduce unnecessary infrastructure and oversight still further.

- **Integrate military and commercial advanced technologies.** Integrating the defense and commercial industrial bases means that the results of substantial investments in military-related technologies will be available for exploitation by commercial industry. This will help the U.S. economy.

We also plan to better integrate the unified commanders, those who will actually use the systems, into the process of determining what systems will be acquired. In addition, the overall budget process must be linked more closely with individual acquisition decisions. Such integration will add flexibility, efficiency, and innovation to the acquisition process by encouraging consideration of alternative or substitute systems to meet the needs of weapons users.

An Agenda for Reform

To bring daily attention to these issues, the office of the Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) has been established. This office will be the focal point for all acquisition reform issues and for restructuring the acquisition system. The DUSD(AR) will also chair a Senior DoD Acquisition Reform Steering Group, whose members will make recommendations on acquisition reform goals, principles, and actions.

We have identified the following short-term priority measures as the first steps in what will be a larger reform effort:

- Simplify the acquisition of purchases under \$100,000.

- Remove impediments to the purchase of commercial items and services.
- Develop proposals for pilot programs pursuant to the authority in Section 809 of the National Defense Authorization Act for Fiscal Year 1991 (Public Law 101-510).
- Reaffirm the policy preference for the acquisition of commercial items and the use of functional performance specifications unless a DoD-unique product specification or process is the only practical alternative to ensure that a product or service meets users' needs.
- Repeal outdated and unnecessary service-unique statutes as proposed by the "Section 800" *Acquisition Streamlining Report*.

These priorities, the objectives of the acquisition reform effort, and the strategy for meeting those objectives will continue to develop as DoD works with other organizations conducting related efforts — such as the National Performance Review. In addition, many of these initiatives require coordination with and support from other federal agencies, such as the Department of Labor and the Small Business Administration. We will work with the Office of Federal Procurement Policy, the Office of Management and Budget, and other federal agencies to ensure that acquisition reform initiatives are applied government-wide where appropriate.

The Bottom-Up Review was only the beginning of our efforts to reform the acquisition system. The process does not end here. The DUSD(AR) will soon be unveiling a detailed strategic plan for acquisition reform that builds on the results of the Bottom-Up Review and increases the scope of action.

SECTION VIII

RESOURCES TO IMPLEMENT THE DEFENSE STRATEGY

The Bottom-Up Review's Budgetary Starting Point

The final step in the Bottom-Up Review process was to match resources to the defense strategy, force structure, and modernization programs selected. While the Bottom-Up Review was driven primarily by considerations of what constituted the best defense strategy and policy for America, it obviously could not ignore economic realities. Thus, at the conclusion of the review, we estimated what the recommended program would cost and matched it against President Clinton's direction for reductions.

To establish a baseline for this cost comparison, we began with the Bush defense program and adjusted it to reflect updated economic assumptions, the government-wide federal pay reduction, and the findings of a Defense Science Board task force, led by defense analyst Philip Odeen, which was formed to determine if the Bush Administration's defense program had been properly costed. Those adjustments resulted in a baseline total of \$1,325 billion for the FY 1995-99 FYDP. The Clinton Administration defense budget target for this same period was \$1,221 billion; this was based on the President's April 1993 budget, adjusted to reflect the Odeen Panel's findings. Thus, as shown in Table 1, the difference between the baseline and the fiscal target for the FYDP years is \$104 billion.

**Baseline Versus Clinton
Future Years Defense Program**
(Billions of Dollars in Budget Authority)

	<u>FY95</u>	<u>FY96</u>	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY95-99</u>
Baseline	257	261	264	270	273	1,325
Clinton Budget	<u>249</u>	<u>242</u>	<u>236</u>	<u>244</u>	<u>250</u>	<u>1,221</u>
Reduction	8	19	28	26	23	104

Table 1

Budgetary Impact of the Bottom-Up Review

The results of Bottom-Up Review decisions will become adjustments to the FY 1995-99 baseline (\$1,325 billion) program. The decisions fall into four categories:

- Force structure
- Infrastructure (including base closures)
- Modernization and investment programs
- Initiatives

Force Structure. These changes comprise adjustments to Army, Navy, Air Force, and Marine Corps force structure and end-strength, as compared to the Base Force. The active-duty forces of the Army, Navy, and Air Force will be reduced, while Marine Corps and National Guard and reserve forces are increased. Savings in infrastructure directly related to force structure cuts will also be realized. Finally, provisions have been made for the costs of achieving DoD's environmental security objectives. In total, force structure decisions from the Bottom-Up Review will reduce funding requirements by \$24 billion from the FY 1995-99 baseline.

Infrastructure. Separately from the force structure-derived changes to DoD infrastructure, opportunities for savings and efficiencies were found elsewhere in DoD supporting activities, as discussed in Section VII. For example, savings were identified through reductions in headquarters and cuts in civilian personnel levels, as well as through the realignment and closure of military bases and facilities. Estimated savings in these infrastructure programs total \$19 billion.

Modernization and Investment Programs. This broad category includes the development and procurement of ships, aircraft, and other combat equipment, as well as DoD's Science and Technology and Defense

Reinvestment programs. The realigned ballistic missile defense program will generate savings of approximately \$21 billion during FY 1995-99. Other modernization decisions focus on areas where the Bottom-Up Review determined that savings can be achieved (aircraft carriers, space launch, theater aircraft, military communications satellites, and other programs). There also are some systems in which the Clinton-Aspin strategy requires additional investment (combat helicopters, attack submarines, and the V-22 program). Finally, the Defense Reinvestment program will emphasize technologies of potential "dual use" in the military and civil sectors, assist DoD personnel affected by the restructured defense program, and help communities adjust to closure of nearby military bases. The net effect of these investment program decisions (aside from ballistic missile defense) will be a \$32 billion savings during FY 1995-99.

Initiatives. As discussed in Section VI, new initiatives include cooperative threat reduction; counterproliferation efforts; expanded contacts and cooperation with the states of the former Soviet Union; global initiatives to promote democracy; peacekeeping and peace enforcement operations; and humanitarian assistance. The Bottom-Up Review determined that \$5 billion could prudently be added over FY 1995-99 to pursue these objectives.

Summary of Savings in the FYDP. In total, decisions made in the Bottom-Up Review will achieve an estimated \$91 billion in savings (during FY 1995-99) from the \$1,325 billion baseline program (see Table 2). Relative to the Administration's target reduction of \$104 billion, this is a shortfall of about \$13 billion. This difference is spread across the first four years of the FYDP.

**Estimated Resource Changes from
the Bottom-Up Review**

(Billions of Dollars in Budget Authority)

	FY 1995-99
Force Structure	-24
Infrastructure	-19
BMDO	-21
Other Modernization and Investment	-32
Initiatives	+5
Total Savings	-91

Table 2

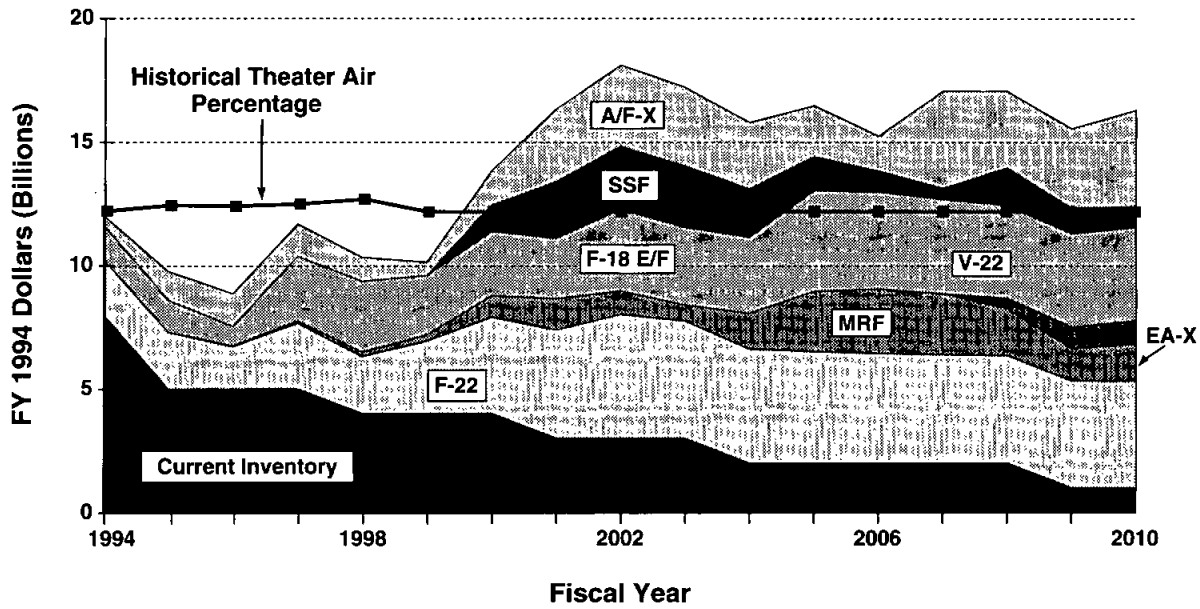
It is important to note that these figures are planning estimates. The Bottom-Up Review developed a strategic framework for defense reductions, not a budget. Throughout the fall, DoD will conduct its normal program and budget review, during which it will identify the additional \$13 billion in reductions needed to meet the President's target. Further savings are likely to come from the following areas:

- **The National Performance Review.** The Vice President's study has many good ideas for better, cheaper government that will be examined by DoD.
- **The FY 1995 Base Closure and Realignment Process.** Savings here may be significant, but would not occur until late in the FYDP.
- **Acquisition Reform.** No savings from acquisition reform were counted in the Bottom-Up Review.
- **Strategic Programs.** We are conducting an extensive review of strategic requirements and programs and are likely to find reductions possible.

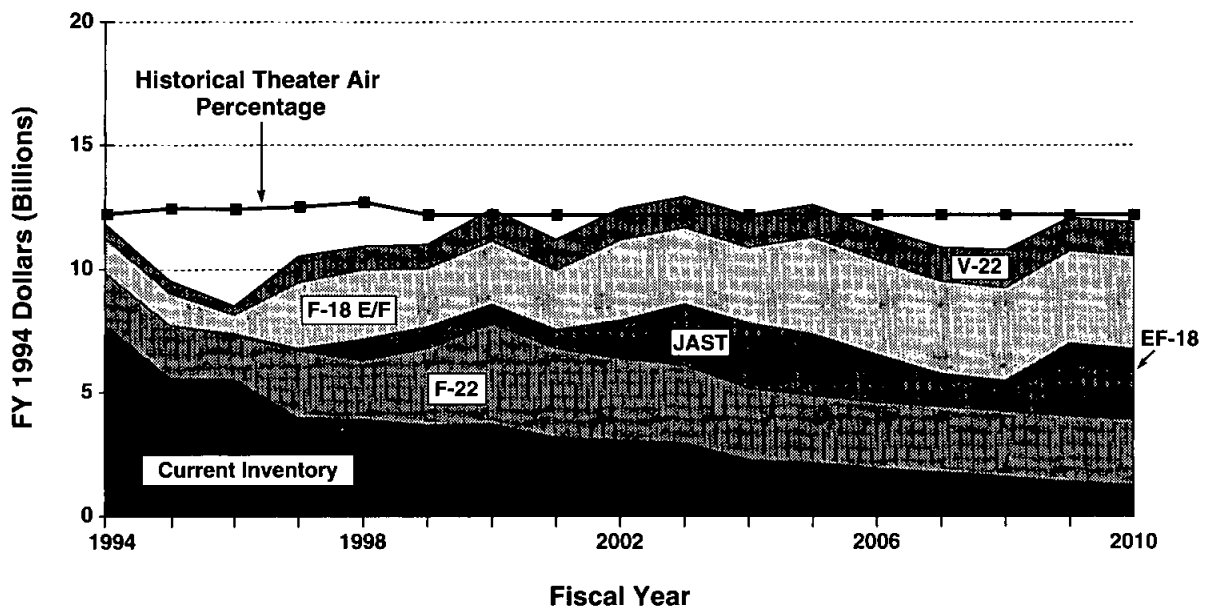
Addressing the "Bow Wave" Problem. As the Bottom-Up Review tracked the impact of its recommendations over the FYDP period, it remained mindful of consequences for defense spending in the year 2000 and beyond. The review was particularly intent on preventing this year's decisions from producing large bills that would have to be paid in future defense budgets.

In most cases, the Bottom-Up Review found that sizing defense programs properly now would prevent "bow wave" problems from occurring later. For example, the previous administration's theater aircraft modernization program called for developing too many new combat aircraft. As shown in Figure 14, these systems would have absorbed a steadily increasing share of investment dollars as they moved into advanced development or procurement early in the next decade. However, as also shown in Figure 14, the new theater aircraft program recommended in the Bottom-Up Review eliminates this "bow wave" while fully funding the V-22 program.

Theater Air Program



Base Force



Bottom-Up Review

Figure 14