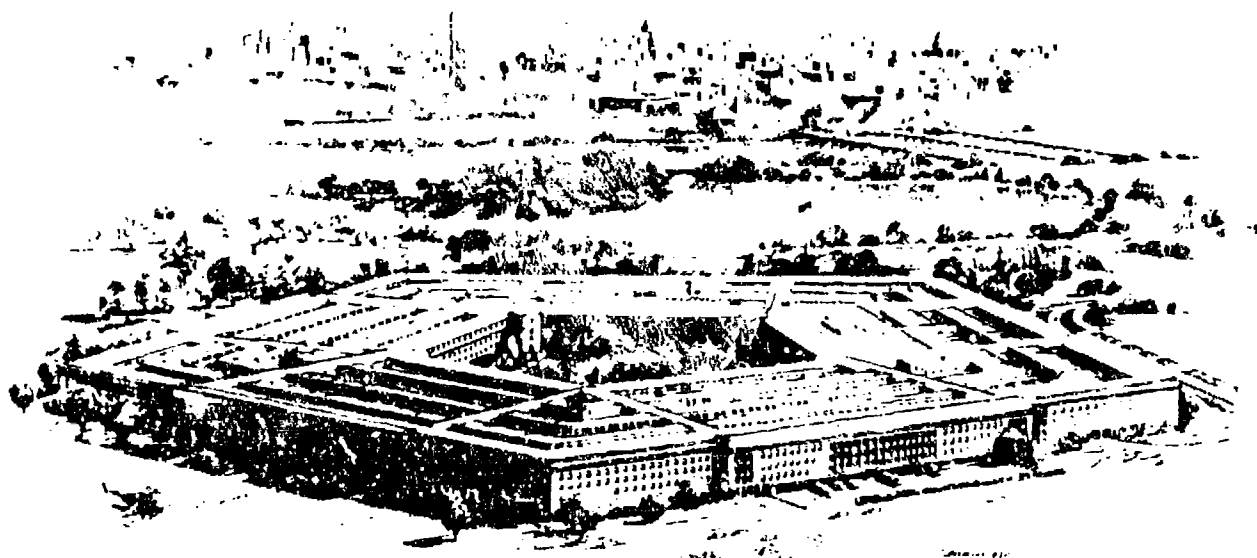


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Annual Report to the President and the Congress



Les Aspin
Secretary of Defense

January 1994

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Report of the Secretary of Defense to the President and the Congress

January 1994

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Message of the Secretary of Defense

MESSAGE OF THE SECRETARY OF DEFENSE

Historians looking back at the latter half of the 20th century will conclude that in the years since World War II, nothing has had as big an impact on our national security requirements as the disappearance of the Soviet threat: not the Korean war, not Vietnam, nothing.

The collapse of the Soviet Union ended more than four decades of Cold War struggle. The foreign policy that the United States had consistently followed for more than four decades — the policy of containment — had succeeded. We are now constructing a replacement for containment as an overarching foreign policy that protects our national interests.

Broadly speaking, we're in a position today that is similar to the one in which we found ourselves after World War II. We knew we had a new world. With the Axis powers vanquished, we tried to analyze the new dangers to America's national security in order to formulate a broad policy that would protect our interests. It was some years before a consensus developed behind containment. This post-World War II period holds an important lesson for us.

When we experience as profound a change in the world order as we did after World War II, or as we are experiencing after the Cold War, it can take years for a clear picture of the new world to emerge. There is a special problem with defense. Ordinarily defense policy is a derivative of larger foreign and national security policies. But President Clinton is charged with protecting and defending the national security of the United States now, not several years from now when the pieces of the post-Cold War order may have settled into place.

We no longer have the Soviet threat against which to measure our defense. It is hard today to overestimate how completely the Soviet threat dominated our force structure, our strategy and doctrine, even the design of our weapons. Now, it is gone. What do we need a defense for? For decades we had no reason to ask such fundamental questions about defense. The Soviet threat had supplied the answers. Now we are asking fundamental questions and are still shaping the overarching policy to guide the answers.

To deal with the defense piece of this process, we at the Department of Defense launched the Bottom-Up Review of our defense requirements. This involved a broad and deep collaboration with the Services, the warfighting commanders-in-chief around the world, and the staff of the Joint Chiefs of Staff and the Chairman of the Joint Chiefs. We went back to basics. We asked, with the Soviet Union gone, what did we need a military for? What still threatened the United States? We undertook a dispassionate analysis of the threats we faced in this new world. We came up with four that demanded a response.

First is the new nuclear danger. The old danger stemmed from the possibility of a strategic exchange with the Soviet Union. That former Soviet arsenal still exists, but the new danger is the proliferation of a handful of weapons to a rogue state or a terrorist group, perhaps delivered by unconventional means.

Second is regional aggression. Hostile regional powers do not threaten the United States directly, but they threaten U.S. interests and U.S. allies. Iraq's invasion of Kuwait demonstrated this danger clearly, and there are other potential aggressors.

These two are traditional national security threats. As we thought through the threats that faced us, we found that the concept of national security should be broader in this new era than it was in the Cold War.

The third danger shows this broader approach. It is the risk that democratic reforms may falter in the former Soviet Union and elsewhere. If reform fails, it means more turmoil in the world. It means less cooperation and even opposition in such things as diplomacy, peacekeeping, and votes in the United Nations. And it could mean bigger defense budgets. Failure of democratic reform is a real danger.

The fourth danger moves even farther afield from traditional security concerns. It is an economic danger. The President has rightly made economic revival our national priority. In the short run, our national security depends on a strong military. In the long run, our national security depends on a strong economy.

We have designed our strategy and defense program to meet these four dangers. The Bottom-Up Review provided a good answer to the question of what kind of defense we need in this period of uncertainty following the end of the Cold War and the demise of the Soviet Union. As this report explains, we have found that the size of our forces in this new era is largely determined by our judgment that we must be prepared to fight and win two major regional conflicts nearly simultaneously. This force will meet the regional dangers and give us a strong capability to execute other missions as well.

I believe that our basic threat analysis has proven persuasive. We thus have a generally accepted basis for planning a defense in this immediate post-Cold War period, and we have used it to produce the Bottom-Up Force.

We have designed such a force and are implementing that design in our proposed budget plan. We have a strong starting point for that force — the finest group of men and women ever to serve. Our soldiers, sailors, airmen, and Marines are the best trained, best equipped, and most ready our nation has ever had. We are proud of their service in the past year and are dedicated to retaining their quality and readiness in the future.

In the Bottom-Up Review, we determined the resources necessary to support this proposed force. Forces and resources must match. As the President said in

his State of the Union speech, there are pressures to cut the defense budget plan we proposed last year. If we do not maintain a match between forces and resources, we will wind up with a hollow force; a force that looks sound from the outside, but which is afflicted with dry rot on the inside. To avoid this, we are making readiness our first priority and, again as President Clinton said, we must hold the line against further cuts.

Our defense plan meets the new nuclear danger. The spread of nuclear and other weapons of mass destruction, coupled in some instances with ballistic missile technology, represents perhaps the most urgent threat to America, its forces in the field and its allies. We have launched the Defense Counterproliferation Initiative to help deal with this problem. As explained in subsequent chapters, the initiative redirects Department of Defense efforts on proliferation to deal with it as a real and present military threat, as well as a problem to be dealt with by international negotiation and control regimes. We have also redirected our missile defense efforts to meet present, real regional threats. Those efforts are now focused on theater missile defense, not continental defense against massive attack. As part of a larger Clinton Administration effort better to understand the role of nuclear weapons in this era, we have initiated a Nuclear Posture Review, perhaps the broadest ever undertaken in the Department of Defense.

To help strengthen democracy and reform in the former Soviet Union, we have instituted a series of ongoing, cooperative contacts with the Russian military demonstrating how militaries interact with civilian governments in democratic nations.

To do our part in dealing with the economic danger, the Department of Defense investment in research and development is putting significant resources behind dual-use technologies, those technologies with both civilian and military uses. And we have begun to examine our policies to deal with industrial base consequences of the large reduction in forces we are managing.

Beyond the Bottom-Up Review, the past year also required us to deal with tough social issues in a way that allows us to maintain forces ready to fight. One of those issues was service by homosexuals. The policy we shaped reversed the former practice of aggressive investigation to discover homosexuality. Where before a homosexual who wanted to serve in the armed forces had to work hard to avoid discovery, now a homosexual has to, in effect, work hard to be discovered, and he or she can honorably serve their country.

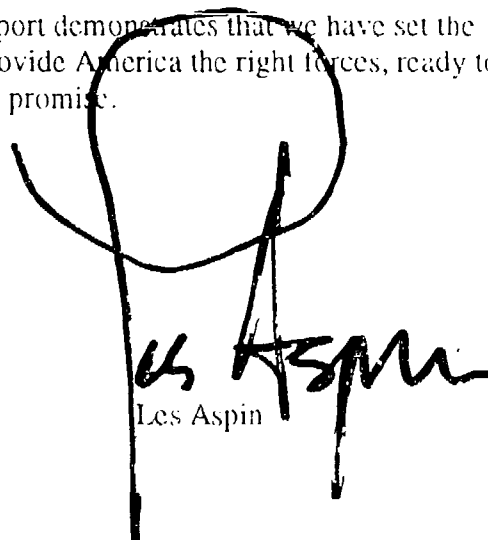
Another issue with far-reaching social implications was that of women in combat. Over the past year, we have taken policy decisions that open combat aviation and Navy surface warships to women. Women remain excluded from direct ground combat, but thousands of others billets have been opened to allow the Department of Defense to make the best use of all the talents available to provide a ready force. These decisions expanding opportunities for women were both the right thing and the smart thing to do.

These social issues could have been explosive if not handled properly. Continuing controversy would have harmed morale and hurt readiness. Therefore, one test of how successful these policies are must be whether they have put an end to widespread controversy and have been generally accepted. They have.

The year 1993 was largely devoted to understanding our external environment, the threats it posed to America and American interests, and the forces they required as shown in the Bottom-Up Review. The year 1994 will be largely devoted to taking action to improve DoD's internal processes. We'll have to do business better if we are to afford the forces we have projected.

This internal effort will take two main paths, acquisition reform and financial management reform. Acquisition reform is urgently needed if the department is to make good on President Clinton's pledge to maintain the best equipped force in the world. We must make fundamental changes in our acquisition process to get more for our money and get better access to needed commercial products and technology. The financial management chapter makes plain in unusually stark language that the department has no choice but to get its financial house in order.

In these and other ways, this annual report demonstrates that we have set the Department of Defense on a path to provide America the right forces, ready to fight, in this new era of turbulence and promise.



Les Aspin

Meeting the Challenges of the New Security Era

Part I

MEETING THE CHALLENGES OF THE NEW SECURITY ERA

Introduction

The security environment for the United States has changed dramatically since the end of the Cold War. The threat that drove the bulk of American defense decisionmaking for four and a half decades — that determined strategy and tactics, doctrine, the size and shape of forces, the design of weapons, and the overall size of defense budgets — is gone.

This collapse of the Soviet threat is the result of two revolutions. The first revolution began on December 7, 1988, when the Soviet President, Mikhail Gorbachev, announced in a speech to the United Nations (U.N.) that he was ordering the withdrawal of tens of thousands of Soviet troops from Eastern Europe and unilaterally reducing the Soviet armed forces by half a million troops. By signaling to the countries of Eastern Europe that Soviet troops on their soil would no longer enforce Soviet rule, Gorbachev — deliberately or unwittingly — paved the way for a cascade of historic events: the fall of the Berlin Wall, the largely peaceful democratic revolutions that swept across Eastern Europe in 1989, the withdrawal of 500,000 Soviet troops and thousands of weapons from Eastern Europe, and ultimately the dissolution of the Warsaw Pact in 1991. By the end of this first revolution, the threat of a Soviet-led Warsaw Pact invasion of Western Europe had all but disappeared.

The second revolution took place in the latter half of 1991. The Baltic States had already declared their independence from the Soviet empire and Gorbachev had begun negotiations with republican leaders on the transference of power to the republics. In reaction to these events, Communist hard-liners in Moscow mounted a coup in an attempt to halt the march of reform and reassert their control over Soviet society. The August 1991 coup not only failed, it accelerated change. It empowered the reformers and rallied the Russian people around democratic evolution. It also set the stage for the collapse of the Communist Party, Gorbachev's resignation, and the collapse of the Soviet Union as a national entity and a military foe. In sum, it set the stage for a multipolar world; dispersed, regionalized conflicts; an expanded leadership role for the United States as the sole remaining superpower; and a host of new opportunities.

The end of the Soviet Union and all that this implies is making profound changes in the way America views the world. This is a period comparable to the end of World War II. It was clear that profound change had taken place then, but it was unclear what kind of world would replace the old one. Today, it is not clear what new paradigm will replace East-West rivalry and a bipolar world, but one can see clear threats to America and its interests. The way the United States provides for the security of its people in the 1990s and beyond must change enormously. The task, then, is to determine what kind of defense is required for America in the foreseeable future, and then provide that defense within America's means.

Defining the post-Soviet security environment is the critical first step in sizing and shaping a new defense, right for the times. This new American force must be created from the bottom up, not just by subtracting from the old Cold War structure. Understanding where Americans have

important interests and how they should be advanced, who might threaten them, and how they might be threatened are essential to ensuring that Americans have the right strategy and forces for the challenges ahead.

A clear understanding of the differences between the old and new threat environments is critical to providing the right defense for the new era. There is no question that the new security environment for the United States is less threatening. While the strategic nuclear weapons of the former Soviet Union (FSU) still exist, the United States is no longer locked in a struggle for survival with the Soviet Union. But, as Americans quickly learned on August 2, 1990, the day Iraq invaded Kuwait, the world is still a dangerous place, and American lives and interests can be threatened.

The New Security Environment

THE OLD VERSUS THE NEW SECURITY ENVIRONMENT

The new post-Cold War, post-Soviet security environment is more complicated, more ambiguous, and constantly changing. The old Soviet threat was bigger, but more manageable. The new security environment is more difficult to understand and respond to. A comparison of the old and new security environments is detailed below. The thrust is evident — American security needs during the post-Soviet era will be very different from the past.

The Changing Threat Environment

OLD	NEW
Predictable	Uncertain
Expansion of Communism	Failure of Democratic and Market Reforms
U.S. Dominant Western Power	U.S. Militarily No. 1, but not Economically Dominant
Fixed Alliances	Ad Hoc Coalitions
Single Threat	Diverse Threats
Strategic Use of Nukes	Terroristic Use of Nukes
Europe-Centered	Regional
High Risk of Escalation	Little Risk of Escalation
Soviet Military Power	Regional Aggressors

THE FOUR DANGERS

The new post-Soviet security environment is dominated by four broad challenges or dangers:

- Dangers posed by nuclear weapons and other weapons of mass destruction (WMD), including dangers associated with the proliferation of nuclear, biological, and chemical weapons and their delivery systems, as well as those associated with the large stocks of these weapons that remain in the FSU.
- Regional dangers posed primarily by the threat of large scale aggression by major regional powers. These include not only aggression by parties with interests antithetical to those of the United States; but also the potential for smaller, internal conflicts based on ethnic, tribal, or religious animosities; state sponsored terrorism; and subversion of friendly governments.
- Dangers to democracy and market reform in the former Soviet Union, Eastern Europe, and elsewhere. The reversal of reforms and the emergence of ultranationalist authoritarianism, particularly in Russia, would substantially alter the security situation for the United States.
- Economic dangers to national security, which could result if the United States fails to restore a strong, competitive, and growing economy.

Corresponding to each of these dangers is a set of opportunities that, if seized, would enhance American security. Understanding these new dangers and opportunities of the post-Soviet security environment was the critical first step in devising a new strategy and sizing and shaping U.S. military forces for the new era.

Responding with the Bottom-Up Review

What America needed was a new way to build a national defense that meets the real dangers of the new era, a reexamination of defense needs from the bottom up. In 1993, the Secretary of Defense undertook the Bottom-Up Review (BUR) to select the right strategy, force structure, modernization programs, and supporting industrial base and infrastructure to provide for America's defense in this new era.

The Bottom-Up Review provided the first comprehensive assessment of U.S. defense needs in the post-Soviet era.

In the course of the seven-month review, a step-by-step process was employed to develop key assumptions, broad principles, and general objectives and to translate them into a specific plan for strategy, forces, and defense resources. These steps included:

- Assessing America's needs in the post-Cold War world, particularly the new dangers and opportunities it presents;

- Devising a new defense strategy to protect and advance American interests in this new era;
- Constructing building blocks of forces to implement the strategy;
- Combining these force building blocks to produce options for an overall force structure; and
- Complementing the force structure with weapons acquisition programs to modernize American forces, defense foundations to sustain them, and policy initiatives to address new dangers and take advantage of new opportunities.

Every step in the conduct of the Bottom-Up Review was characterized by close collaboration between the civilian staff of the Office of the Secretary of Defense (OSD) and military professionals in the Joint Staff, the Service staffs, and the headquarters staffs of the Unified Commands in the field. Much of the work was done by task forces composed of representatives drawn from various elements in the Department of Defense (DoD). The recommendations from these task forces were reviewed by a steering group, chaired by the Under Secretary of Defense for Acquisition and Technology, that included senior representatives from throughout OSD, the Services, and the Joint Staff. The Secretary of Defense, in close consultation with the Chairman of the Joint Chiefs of Staff, the Service Chiefs, the Deputy Secretary of Defense, and other senior DoD officials, made the final decisions on the recommendations to the President regarding the appropriate defense strategy, force posture, modernization programs and other defense foundations. President Clinton ultimately approved the Bottom-Up Review defense program in late August 1993.

The Bottom-Up Review results were then used to build a multiyear plan for America's future security — detailing the strategy, forces, programs, and defense budgets the United States needs to protect and advance its interests in the post-Cold War era. The goal was to lay the basis for sizing, shaping, and maintaining the right force for the new era.

Sizing, Shaping, and Maintaining the Right Force for the New Era — The Bottom-Up Review

Despite the changing security environment, the prime responsibility of U.S. military forces has remained the same — to deter potential adversaries and to prepare to fight and win wars decisively. As Americans have already learned in the Persian Gulf, this task remains very important even in the post-Soviet era.

THE BOTTOM-UP REVIEW

The primary reason America has military forces is to fight and win when other means fail. Understanding where Americans have important interests, who might threaten them, and how they might be threatened is essential for ensuring that Americans have the right kinds of forces for the challenges ahead.

During the Cold War, American military planning was dominated by the need to confront numerically superior Soviet forces in Europe, the Far East, and Southwest Asia. Now, America's focus is on the need to project power into regions important to U.S. interests and to defeat potentially hostile regional powers.

The key factor in determining the overall size of American force structure is the number of major regional conflicts (MRCs) for which the United States has to prepare. There was concern that if the United States was drawn into a war with one regional aggressor, another could well be tempted to attack its neighbors — especially if it were convinced that the United States and its allies did not have enough military power to deal with more than one MRC at a time. Moreover, sizing U.S. forces for more than one MRC will provide a hedge against the possibility that a future adversary might one day mount a larger than expected threat. Therefore, the recommendation to President Clinton was for the United States to be able to win two nearly simultaneous MRCs. With this capability, America and its allies can be confident that a single regional conflict will not leave U.S. interests and allies in other regions at risk.

The projected force structure that resulted from the Bottom-Up Review will be able to achieve decisive victory in two nearly simultaneous MRCs. When not engaged in two MRCs, the force will be able to conduct smaller scale combat operations characterized by rapid response and a high probability of success. The analyses performed during the Bottom-Up Review not only served as a basis for determining total force structure, they also shed light on several important qualitative dimensions of American military capabilities where significant improvements are warranted. For example, because potential regional adversaries in the post-Cold War era may be able to mount military threats against their neighbors with little or no warning, America's forces must be postured to project power rapidly to support U.S. interests and allies. Hence, the U.S. defense program calls for substantial investments in modern cargo aircraft and the sealift fleet, and in prepositioning more heavy equipment and supplies in regions where large scale threats may develop.

The new defense program emphasizes several other high priority enhancements to U.S. forces. These include:

- Accelerated procurement of advanced munitions so that early-arriving forces can more quickly stop the enemy's advance and U.S. aircraft can more effectively attack a wide range of targets while reducing the risk of attrition;
- Continued development of a new generation of battle field surveillance systems to ensure that the enemy can be quickly located, tracked, and targeted; and
- Increased readiness of 15 combat brigades and selected combat support and combat service support units of the Army's Reserve component.

Together, these and other measures will allow U.S. forces to carry out their wartime missions.

The BUR force structure also provides for a credible overseas presence, an important element in U.S. strategy for dealing with new regional dangers and pursuing new opportunities. The

peacetime overseas presence of American forces is the single most visible demonstration of the commitment to defend U.S. and allied interests in critical regions. The presence of U.S. forces deters adventurism and coercion by potentially hostile states, reassures friends, and enhances regional stability. American overseas presence also provides the leading edge of the rapid response capability required in a crisis. Day-to-day operations with allies improve the ability of U.S. and allied forces to operate effectively together and ensures access to the facilities and bases necessary during a conflict.

While the requirements of deterring and defeating major regional aggression are the main determinants of overall force size, the United States must also be prepared to confront aggression and relieve suffering in less complex operations. Events of the past few years have already borne this out, as military 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 Russia, Ukraine, and other newly independent states under Operation Provide Hope, to conducting the emergency evacuation of U.S. citizens from Liberia during Operation Sharp Edge, to aiding the victims of the civil war in Somalia during Operation Restore Hope.

Through overseas presence and power projection, American armed forces can help deter or contain violence in volatile regions where U.S. interests are threatened. In some circumstances, U.S. forces can serve a peacekeeping role, monitoring and facilitating the implementation of cease-fires 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, the United States may opt to intervene unilaterally to protect its interests. Finally, armed forces will continue to contribute to efforts to halt the importation of illegal drugs to the United States.

Beyond the Bottom-Up Review

COUNTERPROLIFERATION AND THREAT REDUCTION

DoD's counterproliferation and threat reduction activities, in combination with the Nuclear Posture Review, respond to the new nuclear dangers of the post-Cold War, post-Soviet era. These programs and policies represent fundamentally new approaches to coping with the dangers posed by nuclear weapons and other WMD, as well as the means to deliver them.

The key innovation is to treat this danger as a real and present military threat in addition to the traditional approach of dealing with proliferation as a diplomatic problem to be handled through negotiations and international control regimes. Many of the nations the United States might face across a battlefield are likely to have WMD. Hostile nations may perceive WMD as a way to sidestep U.S. conventional superiority. To meet and counter this threat, DoD must prepare to deter and defend against the use of WMD if efforts to block the acquisition of WMD fail. In the same way that the United States developed policies, doctrine, forces, equipment, and intelligence to counter the Soviet threat, DoD is organizing to identify and create the capabilities required

to respond effectively to the threat of WMD in the hands of potential adversaries, while contributing resources to the task of preventing WMD acquisition.

Specifically, to address the new nuclear dangers, the Secretary directed DoD to undertake a new Counterproliferation Initiative that includes measures to: (1) improve intelligence for monitoring and responding to the spread of WMD; (2) improve U.S. ability to destroy, seize, or disable arsenals of nuclear, biological, and chemical weapons and their delivery systems; (3) develop ballistic and cruise missile defenses, focused on the deployment of advanced theater missile defenses to protect forward-deployed U.S. forces and provide technological readiness to construct a defense of the United States, if needed; (4) improve passive defenses, including better individual protective gear and better antidotes and vaccines for U.S. forces in the event they are exposed to chemical or biological attacks; and (5) develop better technologies to detect weapons transported covertly into the United States and elsewhere for terrorist purposes.

These measures to protect U.S. forces and interests from the proliferation danger do not imply an abandonment of efforts to prevent proliferation. DoD is strengthening its cooperation with other government agencies to impede or prevent the spread of weapons of mass destruction. Efforts include the standardization of controls on the export of WMD technologies and materials, and the improvement and expansion of international mechanisms and agreements for limiting and eliminating nuclear, chemical, and biological weapons, their delivery systems, and other high-technology weapons.

Second, DoD is pursuing cooperative threat reduction with the FSU, aimed at eliminating its stockpiles of nuclear, chemical, and biological weapons and preventing the spread of WMD, their components, and related technology and expertise within and beyond FSU borders. This program provides goods and services to the four former Soviet republics which have nuclear weapons located on their territory to assist them in the dismantling and safe storage of nuclear weapons and their components, the conversion of defense facilities associated with WMD to civilian use, and the creation of civilian employment for the technical experts of the former weapons complex. Together with the Nuclear Posture Review described below, these efforts will enhance DoD's ability to meet and overcome the new nuclear dangers of the post-Cold War world.

NUCLEAR POSTURE REVIEW

The Defense Department's Nuclear Posture Review forms an important element of the Administration's response to the new nuclear danger. Recognizing these fundamental changes in the security environment, and in response to the President's direction to review all defense forces, DoD in October 1993 began a comprehensive review of U.S. nuclear posture, the first in 15 years. This Nuclear Posture Review will examine in an integrated fashion the entire range of issues associated with the U.S. nuclear posture: the role of nuclear forces in overall U.S. security, missions and force structure of U.S. nuclear forces and necessary infrastructure, the day-in-day-out operations of the nuclear forces, the mechanical and physical safety of the nuclear weapons themselves, and the relationship of U.S. nuclear posture to the two other DoD responses to the new nuclear danger, counterproliferation, and threat reduction policies. The Nuclear Posture Review will form the foundation that shapes America's nuclear force posture in the post-Cold War world.

The fundamental nature of the Nuclear Posture Review is illustrated by some of the questions it will address: For what circumstances and against which threats are U.S. nuclear weapons intended in this new world? Does the United States still need a triad? How many weapons systems will remain on permanent alert? The Cold War provided one set of answers to these questions, but the new strategic environment requires its own carefully considered approach. Few national security tasks are more important than getting the right response to the new nuclear dangers that Americans face in the post-Cold War world. This effort, due for completion in 1994, will ensure a comprehensive Defense Department contribution to Administration policymaking in determining the U.S. nuclear posture.

MAINTAINING READY TO FIGHT FORCES

The Bottom-Up Review provided the answer to how much and what types of military forces Americans will need for the new era. The United States, however, faces an historic challenge in ensuring that its military forces are kept ready to fight while the military establishment itself is downsized and restructured. This has never been done successfully before.

In meeting this challenge, DoD has taken important first steps. Key among these was to provide guidance to the Services in the construct of their programs that: (1) readiness is the first priority; (2) programs should fund readiness sufficient to carry out the Bottom-Up Review; and (3) guidance in other areas (e.g., modernization) could be broken in order to meeting readiness guidance. The third point in particular gave readiness unprecedented priority.

These elements represent a good start. More must be done. DoD has launched a three-point program to: (1) better understand what policies and resource allocations best enhance readiness, (2) organize DoD efforts around this better understanding, and (3) stay ahead of the problem.

Using Force in the Post-Cold War, Post-Soviet Era

Today's security environment holds no single threat compelling enough to dictate basic strategy, as it did with containment, or to drive defense planning and military doctrine. Now potential threats are smaller and numerous, but they still threaten the nation's security. It is extremely difficult to know when these threats will emerge, thus making it much more difficult to determine whether, when, or how to use force in coping with these new dangers.

The current debate over whether, when, or how the United States should use force in the post-Cold War era has taken place largely in the context of ongoing crises in Bosnia, Somalia, and Haiti.

The debate over peace operations, as well as the general issue of the proper role of multilateralism in U.S. strategy, needs to be set in the broader context of the use of force in the post-Cold War era. DoD, in particular, has to ensure that the emerging lexicon of peace operations does not obscure the fact that what basically is at issue here is the commitment of U.S. military forces to action overseas. This is a topic of utmost seriousness, about which Americans and their elected representatives demand clear thinking and straight talk from their leaders.

A new consensus among Americans on using force in the post-Cold War era will not emerge overnight. That consensus is likely to emerge from a rigorous examination of the importance of U.S. interests at stake in future conflicts and clear assessments of the potential costs, risk, and benefits of alternative courses of action. In this era of almost instant communication, the demands on U.S. military forces seem almost endless, as the pictures of human misery from around the globe compete for air-time. It is therefore imperative that the nation think through what guidelines should be used when deciding whether, when, and how to use force in this new era.

Engagement, Prevention, and Partnership

The forces described in this report serve one purpose — to advance the goals of the United States. To achieve this during this post-Cold War period, America must pursue political, economic, and military engagement internationally. Such an approach helps to avoid the risk 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 U.S. interests from arising.

This approach has two characteristics: prevention and partnership. It advocates preventing threats to U.S. interests by promoting democracy, economic growth and free markets, human dignity, and the peaceful resolution of conflict, giving first priority to regions critical to U.S. interests. To succeed, this partnership will require the contributions of its allies and will depend on equitable political, economic, and military relationships with them.

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. This requires that the United States remain the leading security partner in Europe, South and Central America, East Asia, the Near East, and Southwest Asia. However, America must find ways to sustain its leadership at lower costs. For their part, U.S. 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, the United States must encourage the spread of democratic values and institutions. In this regard, the collapse of the former Soviet empire presents an unparalleled opportunity to bring peace and prosperity to millions of people who have expressed a clear desire to join the community of democracies.

The United States is now the world's dominant power, with the world's strongest military, its largest economy, and its most dynamic, multiethnic society. America's leadership is sought and respected in every corner of the world. Around the world, America's power, authority, and example provide unparalleled opportunities to lead.

Defense Initiatives

Part II

THE BOTTOM-UP REVIEW — FORCE STRUCTURE AND CRITICAL ENHANCEMENTS

Introduction

The Bottom-Up Review (BUR) produced 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. Through an assessment of the primary threats to U.S. security, the BUR developed a multifaceted defense strategy that guided the development of U.S. force structure. This analysis led to the broad conclusion that the United States had to maintain forces capable of fighting and winning two nearly simultaneous major regional conflicts (MRCs). The BUR also identified programs to enhance the capabilities of U.S. forces in areas critical to the execution of their wartime missions.

Force Structure Analysis

Overall, four broad classes of military operations were used in the BUR to evaluate the adequacy of future force structure alternatives:

- Major regional conflicts;
- Overseas presence — the need for U.S. military forces to operate in critical regions;
- Smaller-scale conflicts or crises that would require U.S. forces to conduct peace enforcement or intervention operations; and
- Deterrence of attacks with weapons of mass destruction (WMD), either against U.S. territory, U.S. forces, or the territory and forces of U.S. allies. (This is addressed in a later chapter).

This list is not all-inclusive. The United States will provide forces and military support for other types of operations, such as peacekeeping, humanitarian assistance, and to counter international terrorism. However, such operations are not likely to be major determinants of general-purpose force structure.

The analysis of each of these four types of operations allowed the construction, for planning purposes, of building blocks of the forces required to support them. By combining the building blocks and adjusting them to account for judgments about the need to conduct simultaneous operations, DoD was able to determine the number and mix of active and reserve forces that will be needed to carry out U.S. defense strategy.

Major Regional Conflicts

As the most demanding category of military operations, MRCs were the primary factor in considerations about sizing and shaping the overall force structure.

During the Cold War, America's military planning was dominated by the need to confront numerically superior Soviet forces. 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 continuing need to be able to counter such regional aggression.

SCENARIOS AS PLANNING TOOLS

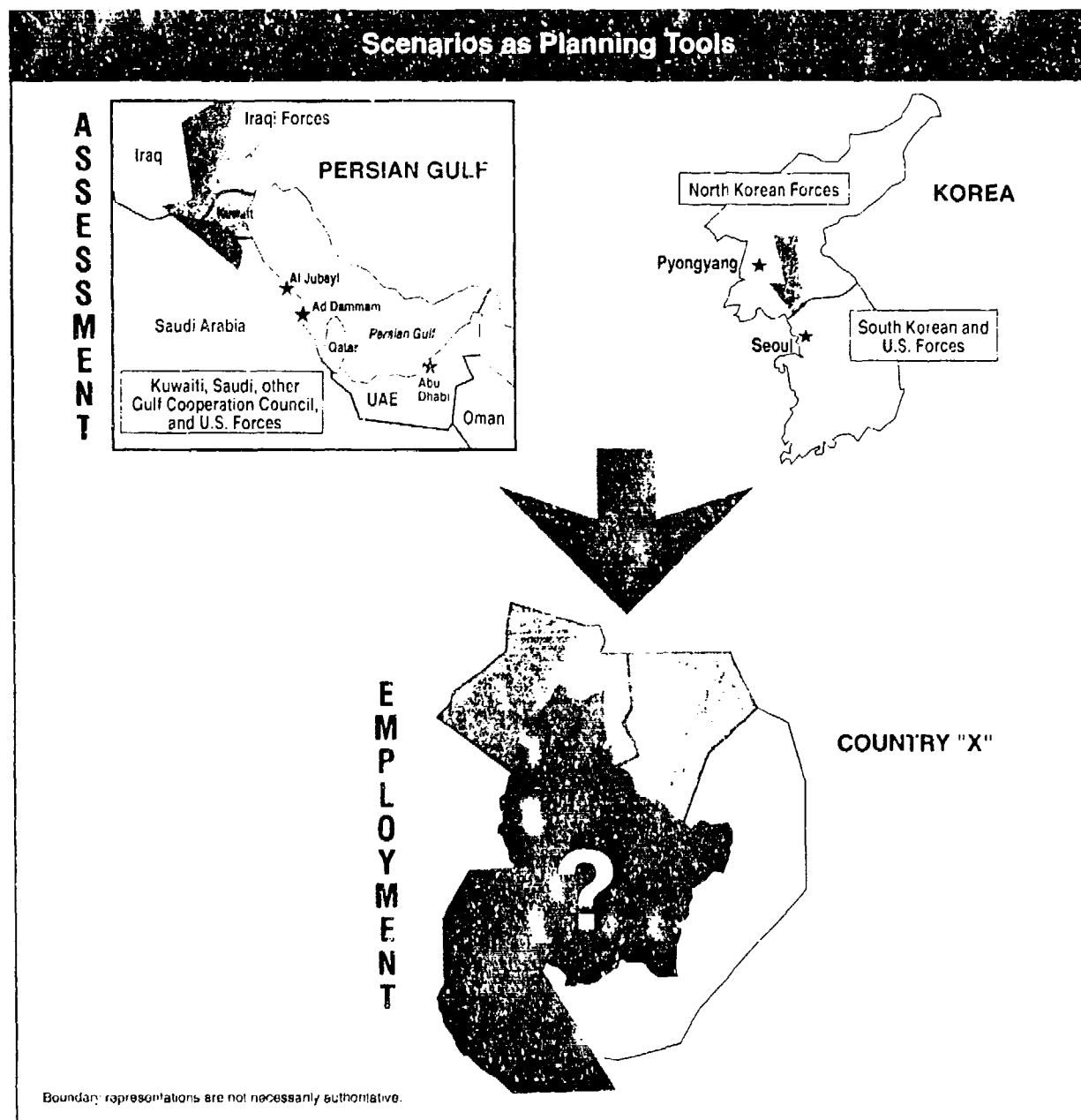
For planning and assessment purposes, the BUR used a number of scenarios depicting possible future conflicts as a means of testing the capabilities of alternative force structures and supporting assets. The two main scenarios employed by the Bottom-Up Review envisioned aggression by a remilitarized Iraq 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 that could be presented by a well-armed regional power and an important tool for assessing different options for U.S. military forces.

In these and other scenarios, the performance of projected U.S. forces in relation to many critical parameters was examined, 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.

Both scenarios assumed a broadly 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 very plausible. History shows that the location and timing of aggression often cannot be anticipated, even large-scale attacks. 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 America's allies to grant U.S. forces access to facilities in their countries.

The scenarios employed in the BUR also assumed the United States will often be fighting as the leader of a coalition, with allies providing some support and combat forces. They also assumed that states most directly affected by aggression in their region will contribute forces. Correspondingly, in response to aggression, the United States would certainly solicit participation by forces from nations outside the affected region, especially those from U.S. treaty allies. Regardless of these assumptions, U.S. forces must be sized and structured to preserve the flexibility and the capability to fight and win without the participation of forces from extra-regional powers if deterrence fails.



THE FOUR PHASES OF U.S. COMBAT OPERATIONS

Should deterrence fail and conflict occur, an understanding of how combat operations would likely unfold is vital to understanding U.S. requirements. There would likely be four main phases:

Phase 1: Halt the Invasion

The highest priority in defending against a large-scale attack is to minimize the territory and strategic facilities that the invader can capture, thereby precluding their use as bargaining chips. In addition, stopping an 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.

Primary responsibility for the initial defense of their territory rests with America's 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. The bulk of U.S. forces, however, will have to come from the United States in most circumstances. This places a premium on rapidly deployable yet highly lethal forces to blunt an attack.

High priority missions for U.S. forces in this phase would include direct attacks on advancing enemy forces; air defense and ballistic missile defense to protect rear areas; attacks on selected, high value strategic assets, such as centralized command and control sites; interdiction of lines of communication critical to the enemy's offensive; and suppression of enemy air defenses.

Phase 2: Building Up U.S. Combat Power While Reducing the Enemy's

Once the enemy attack had been stopped, United States 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 ensure that the enemy did not regain the initiative.

As more land- and sea-based air forces arrive, 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 by direct and indirect missile and artillery fire from ground, air, and sea forces, and by psychological operations (PSYOP) to reduce the enemy's will to fight. Meanwhile, other U.S. forces, including heavy ground forces, would begin preparations for the counteroffensive.

Phase 3: Defeat the Enemy

In the third phase, United States and allied forces would mount a large-scale, air-land counteroffensive to defeat the enemy by attacking his centers of gravity, retaking territory he had occupied, destroying his war-making capabilities, and successfully achieving other operational or strategic objectives. In many cases, U.S. forces would also threaten or carry out amphibious assault landings in the enemy's rear areas.

Phase 4: Provide Post-War Stability

Following a U.S.-coalition victory, military forces would remain in theater to ensure that the conditions that resulted in conflict do not recur. Additionally, these forces could help repatriate prisoners, occupy and administer some or all of the enemy's territory, assist in reestablishing friendly governments in liberated areas, or ensure compliance with the provisions of the cease-fire agreements or peace accord.

SUPPORTING CAPABILITIES

U.S. and allied forces cannot win without the requisite support elements. Several types of support capabilities will play essential roles in any combat operation. These include:

- Airlift, which is especially critical to deploy forces and materiel required for the first weeks of an operation;
- Prepositioning of heavy combat equipment and supplies, both ashore and afloat;
- Sealift, which in any conflict, will carry most of the combat equipment and supplies needed by U.S. forces;
- Battlefield surveillance and command, control, and communications assets to locate the enemy, to identify his intentions, and to ensure timely synchronization of coalition operations;
- Advanced munitions, which can dramatically increase the effectiveness of the fighting force; and
- Aerial refueling aircraft, which would be needed to support both the deployment to the theater and the employment of air assets in combat operations.

THE MAJOR REGIONAL CONFLICT BUILDING BLOCK

In planning U.S. force structure and allocating resources, the first step was establishing force levels and support required to enable America to win one MRC across a range of likely conflicts. The detailed analyses of future MRCs, coupled with military judgment as to the outcomes, show the following forces will be adequate to execute the strategy outlined above for a single MRC. There is an important caveat. DoD must make the critical programmed enhancements to the capabilities of these forces and their supporting assets. Here is one MRC building block:

- 4 to 5 Army divisions;
- 4 to 5 Marine Brigade Equivalents;
- 10 Air Force fighter wings;
- Up to 100 Air Force heavy bombers;

- 4 to 5 Navy aircraft carrier battle groups; and
- Special operations forces.

These forces constitute a prudent building block for force planning purposes. In the event of a conflict, U.S. response would depend on the nature and scale of the aggression and 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. But the BUR analysis also led DoD to the conclusion that enhancements to U.S. military forces, focused on ensuring their ability to conduct a successful initial defense, would both reduce U.S. overall force requirements and increase the responsiveness and effectiveness of U.S. power projection forces.

As already discussed, it is prudent for the United States to field forces that in aggregate are sufficient to fight and win two MRCs that occur nearly simultaneously. In planning America's overall force structure, two other factors come into play. First, sufficient strategic lift must be available 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 aircraft — such as B-2s, B-52s, F-117s, Joint Surveillance and Target Attack System (JSTARS), and EF-111s — would probably need to shift from the first to the second MRC.

Force Enhancements for Regional Conflict

The ability of U.S. forces to fight and win two nearly simultaneous MRCs hinges on investments in several critical, programmed force enhancements. These enhancements will improve the mobility and lethality of U.S. forces, enabling them to rapidly deliver more combat power to distant regions. Many of these are particularly important in the crucial first phase of battle, when stopping an aggressor's invasion is of utmost importance. These enhancements fall into three categories:

- Improved effectiveness of early arriving forces;
- Improved Army reserve component readiness; and
- Strategic mobility enhancements through more prepositioning and enhancements to airlift and sealift.

INCREASED EFFECTIVENESS OF EARLY ARRIVING FORCES

Several enhancements will dramatically improve the ability of U.S. forces to halt an enemy armored advance and destroy critical fixed targets in the first phase of conflict.

Advanced Munitions and Sensors

Damaging or destroying armored vehicles has long been a difficult task for rapidly deploying forces. However, this picture is changing dramatically now that new technologies for smart

munitions and improved sensors for electronic surveillance of the battlefield are maturing rapidly. New sensors on platforms that provide adverse weather surveillance of the battlefield at significantly increased depths and with wide-area, continuous coverage are essential to be able to target advanced munitions. Several such sensor platforms are undergoing final stages of development of operational testing and are to be fielded in the next few years. Examples include the synthetic aperture and moving target indication radars on the E-8C JSTARS and Unmanned Air Vehicles (UAV) in several endurance and range classes with various sensors.

The CBU-97B/Sensor Fused Weapon (SFW), now in the early phases of production, is the first of these. SFW is a dispenser-delivered, wide-area, all-weather guided munition that gives aircraft the capability to disable or destroy multiple armored vehicles in a single pass. As such, it is far more effective than currently available area weapons, yet it does not sacrifice aircraft survivability. With its capability for multiple kills per pass, SFW provides a robust enhancement to U.S. anti-armor capability. The Air Force is already procuring SFW. The Navy is developing a version of SFW that incorporates insensitive explosives to equip its Joint Standoff Weapons (JSOW) munitions.

The Wide Area Mine (WAM), which is still in development, is highly effective in disabling armored vehicles and allows large areas to be sown with mines that should be difficult to neutralize. The WAM can be delivered by either aircraft or missiles. Limited stocks of the WAM should be available in FY 1998.

The Brilliant Anti-Tank (BAT) munition — also under development — will be delivered by the Army Tactical Missile System (ATACMS). It promises to be even more effective than the SFW. The Army is also developing the Sense and Destroy Armor (SADARM) submunition, which can be fired by 155mm howitzers.

New weapons to improve the ability of U.S. forces to destroy stationary targets are also under development. The Joint Direct Attack Munition (JDAM) will allow aircraft without a laser designating capability to deliver ordnance with accuracy similar to that of a laser-guided bomb. Finally, the JSOW and the Tri-Service Standoff Attack Missile (TSSAM) will enhance the survivability, standoff, and range of selected U.S. attack platforms. Similarly the Enhanced Fiber Optic Guided Missile (EFOG-M) anti-armor system will provide a significantly improved precision anti-armor capability to forces deployed on the ground. EFOG-M will enhance their interdiction potential beyond the line of sight of the adversary and thereby allow them to interdict threats prior to the close battle. This should also reduce friendly casualties significantly.

Taken together, these advanced munitions and sensors will provide U.S. forces with more highly concentrated firepower to blunt an armored invasion in the opening phase of a regional conflict.

Long-Range Bomber Enhancements

Force multiplying effects are particularly pronounced when munitions enhancements are combined with parallel upgrades to the long-range bomber force. Conventional enhancement programs intended to increase bomber survivability, sustainability, and precision weapons delivery capability will soon reach maturity. These programs will give the combined B-1, B-2,

and B-52H bomber force the capability to cover more time-critical targets in the first five days of a conflict. Bombers equipped with the advanced munitions such as air-launched cruise missiles (ALCMs), TSSAM, JSOW, and JDAM will destroy high-value targets and cut lines of communication; and bombers equipped with large quantities of SFW will disrupt and destroy advancing enemy ground forces. If a second MRC should occur, bomber forces can swing to a new theater to conduct similar operations in a matter of hours. This combination of long-range bomber enhancements and new families of smart munitions provides critical leverage to help meet the requirements of a two-MRC strategy.

Enhanced Carrier-Based Airpower

The Navy is undertaking a number of innovations to improve the flexibility and responsiveness of carrier-based airpower. First, in time of conflict, the Navy plans to augment the normal aircraft and aircrew complement of early-arriving carriers. Increasing the number of fighter/bomber aircraft and air crews per carrier will significantly augment early-arriving sea-based firepower. For example, rapidly deploying 20 additional pilots onto a carrier could increase the carrier's surge sortie rate; adding an additional squadron of F/A-18s to maximize deck space will further increase the surge sortie rate during the first critical weeks of a crisis.

The Navy is also improving its carrier-based strike potential by providing a precision ground-attack capability to many of its F-14 aircraft. In addition, selected Marine Corps F/A-18 and EA-6B squadrons have been assigned to carrier aircraft wings and will serve to more closely integrate Navy and Marine Corps aviation capabilities in littoral warfare.

Retained Marine Corps Force Structure

Maintaining the Marine Corps at 174,000 Marines (rather than the 159,000 envisioned under the Base Force) will allow the U.S. Marine Corps (USMC) to retain the capabilities and readiness it needs to meet continued overseas presence requirements without making unacceptable demands on personnel and to enhance U.S. forces early response in fighting and winning two MRCs.

ADDED ARMY RESERVE COMPONENT CAPABILITIES

One important role for combat elements of the Army National Guard (ARNG) is to provide forces to supplement active divisions, should more ground combat power be needed to support operations. Army Guard units might play a particularly important role in helping to supplement forces available to deter or fight a second major war while U.S. forces were engaged in a large-scale operation elsewhere.

Toward this end, 15 of the 37 ARNG brigades will be designated as enhanced readiness brigades. Within the overall Army reserve component force structure, readiness initiatives will focus on these 15 enhanced readiness brigades and selected combat support and combat service support units.

These 15 brigades will be organized as independent brigades: armored, mechanized infantry, armored cavalry, or light infantry. They will be resourced sufficiently with personnel and

equipment to be ready to deploy 90 days after each brigade's respective mobilization. For regional contingencies, the ARNG enhanced brigades provide additional depth to deal with uncertainty and risk. They will increase the available Army combat power by reinforcing or augmenting the deployed active divisions and corps. The enhanced brigades will be closely affiliated with active divisions and corps for peacetime training and are integrated into the deliberate planning process.

STRATEGIC MOBILITY ENHANCEMENTS

U.S. mobility assets in Operation Desert Storm were effective. But this experience also highlighted important areas where improvements are needed in order to ensure that U.S. forces can prevail in future, short-warning conflicts. Strategic airlift and sealift must move U.S. combat power to the theater more quickly and provide it with better support throughout their deployment.

Implementing the Mobility Requirements Study Plan

In the National Defense Authorization Act for Fiscal Year (FY) 1991, Congress directed DoD to determine future mobility requirements for U.S. armed forces and to develop an integrated mobility plan. The Mobility Requirements Study (MRS) identified deficiencies in strategic mobility and recommended ways to correct them. While the BUR did not conduct a separate strategic mobility study, it did reexamine plans for modernizing mobility assets in the context of DoD's new strategy and planned force structure. The major components of the MRS-based plan include:

- Addition of 11 large medium speed roll-on/roll-off (RO/RO) ships (LMSRs) to more than double surge sealift capacity for transporting forces and equipment from the United States to distant theaters;
- Provision of 8 additional LMSRs and 2 container ships to deploy an afloat prepositioned package of Army combat, combat support equipment, and combat service support equipment;
- Expansion of the Ready Reserve Force (RRF) by adding 19 RO/RO ships (12 of the 19 were purchased in FY 1993). Increase RRF fleet readiness to respond within specified readiness standards;
- Phased acquisition of the C-17 strategic airlift aircraft. The Defense Acquisition Board agreed to purchase 40 C-17s through FY 1996, taking the program through initial operational capability. A decision on further procurement of C-17s or an existing wide body military or commercial cargo aircraft is dependent upon contractor and aircraft performance through flight test and reliability, maintainability, and availability assessment; and
- Improvement of other specific components of the transportation system within the United States to move combat and support units from fort to port -- from their peacetime locations to airports and seaports of

embarkation — such as expanding rail and airheads at contingency force installations, upgrading facilities at strategic seaports, constructing a containerized ammunition facility on the West Coast, and purchasing and prepositioning over 1,000 railcars for heavy/oversized cargoes.

The Bottom-Up Review confirmed the need for these and other improvements. Consequently, DoD will meet the funding requirements necessary to implement its parts of the MRS requirements, as well as some other measures.

Enhanced Prepositioning

By prepositioning, both afloat and ashore, brigade sets of heavy equipment for Army and Marine forces, as well as consumables and other logistics assets for all deploying U.S. forces, the time required to move these forces to distant theaters will be greatly reduced. Prepositioning or forward deployment of supplies and equipment reduces the early requirement for strategic air and sealift assets in a crisis and allows troops and equipment to be married up more quickly. This can substantially strengthen U.S. defensive capabilities in the critical opening phase of a conflict.

The three maritime prepositioned Marine brigade sets continue to provide assets for Southwest Asia (SWA) and Northeast Asia, and potentially other regions as well. The U.S. Army is in the process of creating two prepositioned brigade equipment sets ashore in SWA, one ashore in Northeast Asia, and one set afloat that could be sent on short notice to either region, while retaining a reduced number of sets in Europe (five heavy Army brigade sets and one Marine brigade set). These additions will mean that U.S. forces can field a full Army division as well as a Marine Expeditionary Force (MEF) from prepositioned assets in either SWA or Northeast Asia. Such an arrangement will enable the United States to deploy heavy ground forces much more rapidly, and free up sealift assets to get additional units from all Services into the theater more quickly.

Overseas Presence

U.S. forces deployed abroad protect and advance America's interests and perform a wide range of functions that contribute to U.S. security. These include deterring aggression, enhancing regional security, improving interoperability with allies and friends, and providing timely initial crisis response.

In Europe, the United States 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. The United States will 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 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, the United States also plans to retain close to 100,000 troops. As recently announced by President Clinton, America's 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 have stationed there. In light of the continuing threat of aggression from North Korea, the United States has frozen troop levels in South Korea and is modernizing South Korean and American forces on the peninsula. DoD is also exploring the possibility of prepositioning more military equipment in South Korea to increase U.S. crisis-response capability. While plans call for the eventual withdrawal of one of the two Army brigades from South Korea, President Clinton recently reiterated that U.S. troops will stay in South Korea as long as its people want and need American support.

On Okinawa, the United States will continue to station an MEF and an Army special forces battalion. In Japan, the U.S. forward stationed an aircraft carrier, an amphibious assault ship, and their support ships. The United States 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 Southeast Asia, with the loss of American bases at Clark and Subic Bay in the Philippines, the U.S. focus has turned away from permanent basing structures toward establishing access arrangements with many nations in the area. These new arrangements range from the formal access agreement negotiated with Singapore to the arrangements under consideration with countries such as Malaysia, Australia, and Thailand. Together, they will provide U.S. forces in the area with bilateral and multilateral training opportunities and access to repair, maintenance, and logistics support. These arrangements will also allow U.S. forces to maintain their ability to deploy quickly to any location within the region and to sustain that deployment as long as necessary.

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, the Army plans 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. DoD also is 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. U.S. Navy

forces are supplemented by deployed Carrier Battle Groups and Amphibious Ready Groups (ARG).

Another significant element of U.S. 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, the United States has seven afloat prepositioning ships supporting Army, Air Force, and Navy forces.

In Africa, America will continue important formal and informal access agreements to key facilities and ports which allow U.S. forces to transit or stop on the African continent. The United States will continue to deploy forces to Africa, as in recent operations like Sharp Edge (Liberia) and Restore Hope (Somalia), to support U.S. interests or assist when needed and requested.

In Latin America, U.S. armed forces will help to promote and expand recent trends toward democracy in many countries and will also continue to support the efforts of Latin American governments to combat drug traffickers. The United States will also retain a military presence in Panama, acting as Panama's partner in canal operations and security during the transition to full Panamanian responsibility for these activities and ownership of all U.S. properties by December 31, 1999.

PROVIDING PRESENCE

Sizing U.S. naval forces for two nearly simultaneous MRCs provides a fairly large and robust force structure that can easily support other, smaller regional operations. However, U.S. overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed to win two MRCs. The flexibility of America's 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 U.S. land-based military infrastructure is relatively underdeveloped. For these reasons, the naval 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 the U.S. approach to overseas presence operations. In recent years, DoD has 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 U.S. forces are asked to remain deployed for excessively long periods in peacetime, DoD will experience some gaps in carrier presence in these areas in the future.

In order to avoid degradation to America's regional security posture, DoD has identified a number of ways to fill these gaps and to supplement U.S. posture even when carriers are present. For example, in some circumstances, DoD 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 America a variety of ways to manage its overseas presence profile, balancing carrier availability with the deployment of other types of units. Given this flexible approach to providing forces for overseas presence, the United States can meet the needs of its strategy with a fleet of 11 active aircraft carriers and 1 reserve/training carrier.

Peace Enforcement and Intervention Operations

A variety of contingencies that are less demanding than an MRC 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. U.S. forces may face 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 (SAMs), 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 (for example, MiG-21s, MiG-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 may have several key objectives in a peace enforcement or intervention operation, each of which would require military forces trained and equipped 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; and

- Preparing to turn over responsibility for security to peacekeeping units and/or a reconstituted administrative authority.

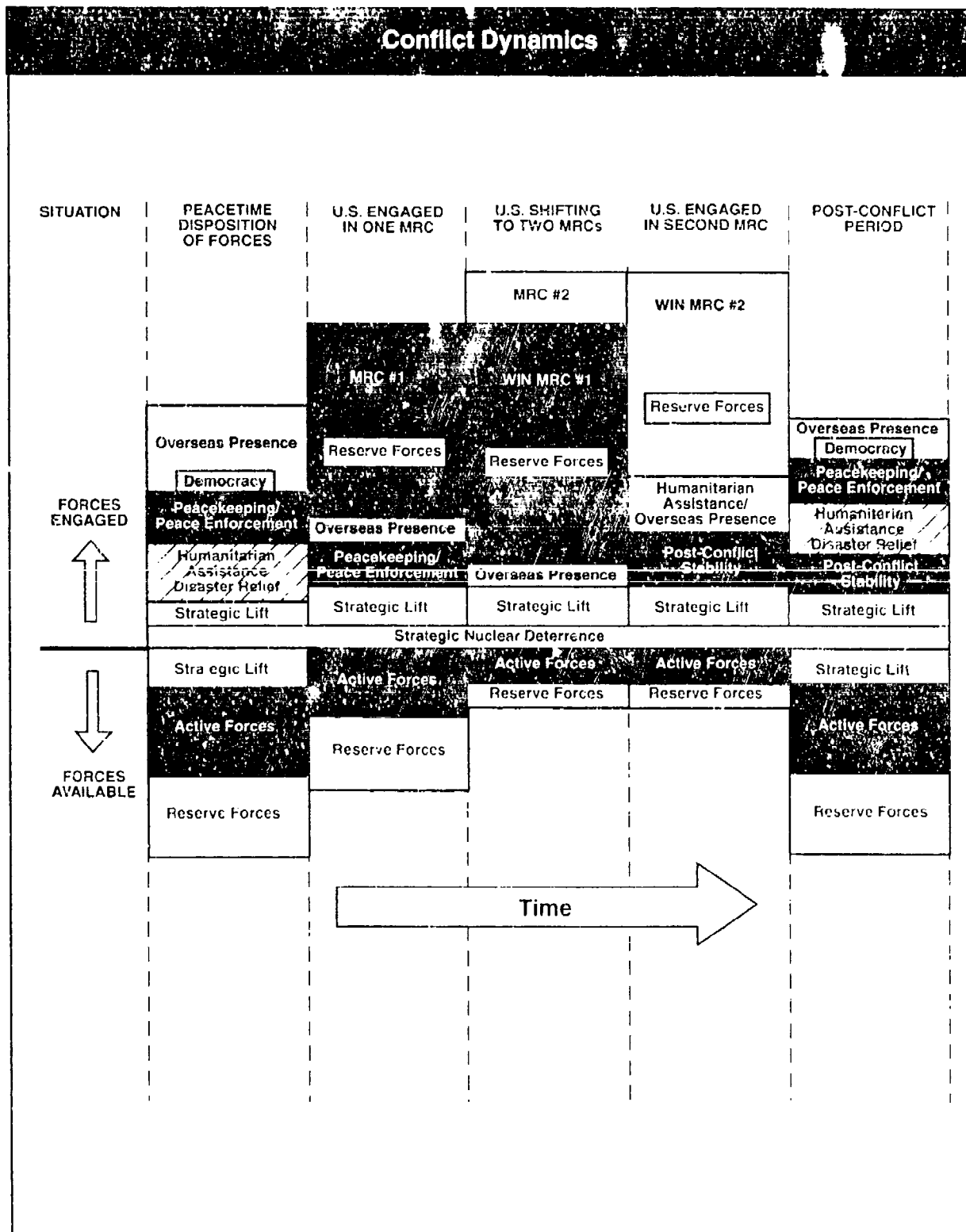
The prudent level of forces that should be planned for a major intervention or peace enforcement operation is:

- 1 air assault or airborne division;
- 1 light infantry division;
- 1 mechanized infantry division;
- 1 Marine Brigade equivalent;
- 1 to 2 carrier battle groups;
- 1 to 2 composite wings of Air Force aircraft;
- Special operations forces, including PSYOP and civil affairs units;
- Airlift and sealift forces; and
- Approximately 50,000 total combat and combat service support personnel.

These capabilities can be provided largely by the same collection of general purpose forces needed for MRCs, so long as those forces had the appropriate training needed for peacekeeping or peace enforcement.

Building an Overall Force Structure — General Purpose Forces

Determining the overall force structure needed to provide the building blocks 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 might threaten the United States or its allies at any given time.



In peacetime, the United States will conduct routine overseas presence operations. In addition, some portion of America's forces might also be engaged in small-scale operations such as peacekeeping and peace enforcement, as well as humanitarian assistance and disaster relief activities. Beyond these types of operations, the United States will routinely hold large forces in strategic reserve.

If an MRC erupts, the United States will deploy a substantial portion of its forces stationed in the United States and draw on its overseas presence forces to put in place the capabilities needed to first halt and then defeat an aggressor. At this point, the national command authority would need to address the issue of identifying forces for deterrence or combat operations in a second theater. Depending on circumstances at the time, DoD might choose:

- To begin withdrawing U.S. forces engaged in smaller operations including peace enforcement or peacekeeping operations around the world and preparing them for possible deployment;
- To begin mobilizing and training Army National Guard and Reserve units to constitute a portion of the second MRC building block or to fill in behind forces withdrawn from smaller-scale operations; or
- To rely on a residual force smaller than the full MRC building block to deter aggression elsewhere.

If a second MRC breaks out shortly after the first, the United States would need to pull together and deploy another building block of forces to assist its allies in the threatened area in halting and defeating the second aggressor. As shown in the chart above, the United States might very likely have to forego the option of conducting sizeable peace enforcement or intervention operations at the same time it was fighting two MRCs. 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.

Once the United States had won both MRCs, U.S. forces would assume a more routine, peacetime posture. However, some forces would probably remain in the regions to maintain stability to assist in the restoration of essential services 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, DoD determined that the force structure shown below, which will be reached by about the end of the decade, can carry out America's strategy and meet its national security requirements.

Table II-1 Force Structure — 1999	
Army	10 divisions (active) 37 National Guard brigades (15 with enhanced readiness)
Navy	11 aircraft carriers (active) 1 reserve/training carrier 45 to 55 attack submarines 346 ships*
Air Force	13 fighter wings (active) 7 fighter wings (reserve) Up to 184 bombers*
Marine Corps	3 Marine Expeditionary Forces 174,000 personnel (active end-strength) 42,000 personnel (reserve end-strength)
Special Operations Forces	43,000 personnel of the Army, Navy, and Air Force assigned to the U.S. Special Operations Command
Strategic Nuclear Forces (by 2003)	18 ballistic missile submarines Up to 94 B-52H bombers* 20 B-2 bombers 500 Minuteman III intercontinental ballistic missiles (ICBMs) (single warhead)
* The FY 1995 Defense Budget and FY 1995-99 Defense Program propose that the Navy's total ships and the U.S. bomber forces be reduced below BUR force objectives. They call for a total of 331 ships by 1999. They also call for retention of 48 B-52H bombers equipped to carry both nuclear-armed ALCMs and conventional weapons, 72 B-1Bs (all to be converted to conventional weapons-only by 1998) and to deploy 20 B-2s with conventional and nuclear weapons delivery capability for a total force of approximately 140 bombers by 1999.	

Conclusion

This force structure will meet U.S. 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 it may face — two MRC's occurring nearly simultaneously, although difficult choices would have to be made in allocating forces should America be faced with this prospect. In particular, it must be recognized that this force structure is not intended to support simultaneous U.S. involvement in MRC's while also sustaining active force involvement in major peace enforcement operations. Finally, the overseas force structure provides sufficient capabilities for strategic deterrence and defense.

READINESS

Introduction

Keeping U.S. military forces ready to fight is the first priority of DoD. U.S. forces must be manned, equipped, and trained to deal with the dangers to U.S. national security described in depth earlier in this report. To achieve this goal, the Bottom-Up Review established building blocks of military power — forces for MRCs, forward presence, military operations other than war, and strategic nuclear deterrence.

Forces comprising each of these building blocks must meet standards in terms of:

- Time it takes to mobilize, deploy to a theater of operations, and engage;
- Military missions they should accomplish once engaged; and
- Length of time they should remain engaged.

Thus, forces ready to fight means an appropriate force structure, modernized equipment with the requisite readiness, and sustainability to meet these standards.

Why Readiness is Number One

There are two compelling reasons to make readiness DoD's first priority, even at the expense of other important uses for the Department's resources.

First, it is essential if the United States is to have successful foreign and security policies. In the post-Cold War world, there will no doubt be many occasions where the country collectively will wish to consider using military instruments to further its interests — everything from turning back aggression of regional powers to humanitarian assistance for those less fortunate overseas.

If, in considering such options, U.S. forces were incapable of executing their missions, policy choices would be seriously circumscribed. The American people would lose confidence in their military's competence, and adversaries would be tempted to pursue aggressive paths. In short, a force not ready would compel the United States to pursue a more passive, less engaged approach to world affairs. A force not ready would encourage its enemies to expand the level of international chaos that the United States, as a leader of nations, wishes to diminish. A force not ready, if the United States tried to engage it, could lead the nation to suffer the consequences of defeat.

Readiness is also a very important factor in the morale and job satisfaction of the men and women of America's armed forces. A ready force is one that offers men and women a challenge which enhances recruiting and retention of high quality personnel. There is no greater frustration for those in any profession than assigning them important responsibilities, and then denying them the tools and the training needed to practice their trade. Keeping U.S. forces

ready to fight is the best way known to keep those in the armed forces proud to serve and content in the fact that, if called upon, they are members of the finest military force in the world.

Readiness Challenges

There is consensus among civilians and the military throughout DoD, members of Congress in both parties, and the public at large that force readiness should not falter.

There is, however, another widespread consensus that will make achieving DoD readiness and sustainability goals most challenging. In the wake of the collapse of the Soviet Empire and the disintegration of the Soviet Union, there is consensus that the United States should lower its defense spending and draw down its forces. In the past, however, as the United States drew its forces down, hollowness crept in. Indeed, drawdowns have structural characteristics that inherently eat at readiness. These include:

- Turbulence in personnel as units disband and individuals are rapidly reassigned;
- Insecurities of an uncertain future for military professionals that make it difficult to recruit and retain the best people;
- Turmoil in the management of materiel as portions of the industrial base shrink or close down, and as weapons, supplies, and spare parts are redistributed throughout the force;
- Sluggishness in the divestiture of bases and other infrastructure that often requires short-term spending to reap long-term savings; and
- Shortsightedness in the management of financial resources, as pressure to produce defense savings quickly biases cuts toward the fast spending accounts, often closely related to readiness.

As if these structural challenges were not enough, there are added complexities that spring from the changed geo-strategic environment. For example:

- In the Cold War, readiness planning focused on deterring or stopping Warsaw Pact attacks. Now U.S. forces must be ready to engage almost anywhere, anytime, for any purpose.
- In the Cold War, a large force to counter the Warsaw Pact gave decisionmakers a huge reserve to draw upon for regional conflicts. Now DoD plans for situations where almost all U.S. forces might be engaged in two nearly simultaneous MRCs. With virtually no slack in the force structure, U.S. readiness posture must be rebalanced across the force every time some element of the force engages in even the least demanding tasks (for example, relatively modest but complex missions for humanitarian assistance or disaster relief).

Meeting the Challenges — Guiding Principles

To have forces ready to fight in the climate of these challenges and to succeed requires the creation and implementation of a new approach that breaks the readiness business-as-usual mold. DoD's approach to meeting the challenge follows three guiding principles.

UNDERSTAND IT

Planning for sufficient readiness is, to begin with, a matter of ensuring that DoD allocates the proper amount of resources — defense dollars — to give U.S. forces the requisite ability to carry out U.S. defense strategy. This is a quite simple concept — input dollars, output readiness to execute U.S. defense strategy. It masks, however, immense complexity in application.

Readiness dollars can be allocated for a vast variety of readiness assets — everything from flying hours to train pilots, to fuel to keep the fleet steaming, to spare electronics parts to keep tanks running. In the current state of understanding, much is known about how dollars translate into the thousands of assets needed for readiness. But much more must be known about how these assets combine together into an overall force ready to fight. In short, as funding allocation are changed among these assets, will a more-ready or less-ready force be produced overall?

To ensure that U.S. military forces have the proper allocation of funds for readiness, DoD must improve its understanding of it — increase its knowledge of how the allocation of funds will affect future readiness of its forces. To this end, the Department has launched an intense effort to develop and apply analytical tools that translate readiness funding inputs into estimated output of future readiness of forces. The goal is to have a set of tools covering key readiness areas in place to assist decisionmaking in this fall's defense program review. The results of this effort should also be useful as Congress considers future force readiness as part of their consideration of future defense programs.

ORGANIZE AROUND IT

Within DoD, the military departments are responsible for ensuring the readiness of units provided by the individual Services. The Chairman of the Joint Chiefs of Staff and the CINCs are in turn responsible for making sure that there are sufficient readiness assets to pull these units together into an effective joint fighting force. OSD is charged with ensuring that there are the right policies and allocation of resources needed for these military organizations to carry out their responsibilities.

Under the DoD structure of the past, all organizational pieces were in place for readiness. Within OSD, however, there was no central focal point — someone to whom the Secretary could turn to ensure that the Department's overall program for readiness was sound.

To correct this shortcoming, DoD initiated several important organizational changes:

- Created a new position of the Under Secretary of Defense for Personnel and Readiness to serve as a focal point for all facets of readiness.

- Established the position of the Deputy Under Secretary for Readiness to assist the Under Secretary in carrying out his readiness duties;
- Organized a Readiness Working Group as a DoD-wide forum to coordinate readiness policies; and
- Put in place a Senior Readiness Council to ensure direct communication among senior DoD military and civilian leaders.

STAY AHEAD OF IT

Along with sound understanding and solid organization, the Secretary also recognized that DoD needed advice on how to stay ahead of readiness. Thus he established the Readiness Task Force — a panel of experts to help the Department ensure that it can spot readiness problems well in advance and take corrective action before hollowness can take hold. This panel is headed by retired Army Chief of Staff General Edward C. (Shy) Meyer and includes other distinguished military leaders now in retirement. This panel was charged with developing an assessment of how well DoD can deal with readiness concerns, and the adequacy of existing readiness reporting systems.

The panel's final report is not due until May of this year. Its work to date, however, has already made many important contributions, including:

- Serving as a vehicle to stimulate discussion and improve coordination among the diverse organizations within the Department with responsibilities for readiness;
- Playing a major role in bringing readiness to the forefront in the Defense Planning Guidance, and promoting a more visible role for the CINCs in affecting funding allocations;
- Identifying Service models which link resource inputs directly to future readiness;
- Assisting senior defense officials in developing priorities for which readiness issues should receive attention, including joint force readiness and readiness of command, control, communications, and intelligence (C⁴I); and
- Increasing the Department's emphasis on the use of simulations for readiness, especially as they apply to training of multi-Service joint forces.

The FY 1995-99 Programs and Budgets

Despite the challenges in precisely projecting U.S. readiness and sustainability needs in the uncertain times outlined above, the programs and budgets for readiness being submitted to Congress represent the best estimates possible applying the substantial knowledge and

experience within DoD today and represent adequate resources to keep U.S. military forces ready to fight and execute U.S. policy.

The process that produced the readiness program began with completion of the Bottom-Up Review. The review established the general purpose force requirements to thwart the four dangers to national security. The guidance issued to the Services following the Bottom-Up Review included three main points:

- Readiness and sustainability are the first priority for defense programs;
- The Services should construct their programs to ensure their forces will have sufficient readiness and sustainability to carry out the strategy of the Bottom-Up Review with acceptable risk; and
- The Services could break program guidance in other areas, if necessary, in order to meet readiness guidance.

Of these points, the last was key. In an unprecedented way of implementing priorities, the Services were directed to protect readiness at all costs — even to the point of cutting modernization and research and development (R&D).

The Services' response to this guidance was positive, and a review of their programs indicates largely acceptable results for readiness.

Assessment of Readiness Funding

The resources in the FY 1995 budget will provide adequate readiness for U.S. armed forces, provided that:

- Congress and the public support the size and allocation of the resources recommended;
- As forces engage in military missions, DoD promptly supplements or replaces the resources consumed in those activities; and
- If economic projections upon which the projected budget is based prove to be worse than anticipated, Congress supplements or replaces resources.

For the outyears of the program beyond FY 1995, DoD plans for readiness based on the budgetary assumptions made appear adequate. Specifically, the elements of readiness critical to the execution of defense strategy are sufficiently funded. As a case in point, OPTEMPO is fully funded as are current personnel programs. On the other hand, there are significant risks to readiness as DoD plans are executed. For example, Service Operations and Maintenance (O&M) accounts may eventually require more funds for reimbursement of funds diverted to support unprogrammed U.N. peace operations or to cover depot and base maintenance where funding is in short supply.

Conclusion

In conclusion, for FY 1995 and beyond, the Department characterizes the force as ready to carry out the strategy of the Bottom-Up Review — but with little slack and with attendant risks. More work needs to be done to achieve DoD's goal of a force ready to fight for the future. But by utilizing a framework of understanding, organizing around, and staying ahead of readiness, DoD will continually be committed to its first priority.

COUNTERPROLIFERATION AND THREAT REDUCTION

Introduction

The United States stands at a critical junction in terms of proliferation. Down one path, unconventional weapons would be relegated to the background. This path holds the promise of reduced violence in armed conflicts, or reduced threats to civilians, and of increased international cooperation, and would enhance America's strengths — unmatched conventional military power, economic strength, and political stature. Down the other and more dangerous path lie more numerous and less stable nuclear nations, together with the potential for unauthorized, accidental, or terroristic use of weapons of mass destruction (WMD).

The Department's counterproliferation and threat reduction activities respond to the nuclear dangers of the new security era, specifically, the danger of proliferation of WMD and the danger posed by the possibility of nuclear spillover from the former Soviet Union (FSU). These dangers are interrelated in that leakage of the FSU's weapons, technology and knowledge can dramatically accelerate the efforts of potential proliferators elsewhere in the world to acquire such weapons for themselves. The Department's response is to treat these dangers as real and present military threats as well as issues to be dealt with through diplomacy and international control regimes. The two Department strategies are:

- The Counterproliferation Initiative adapts defense policy, technology and acquisition strategies, and military organization and planning to augment and improve U.S. ability to prevent the initial acquisition of these weapons, and, if necessary, protect against threats from proliferators, whether states or subnational groups.
- Cooperative Threat Reduction stresses an unprecedented level of cooperation between the New Independent States and the United States to enhance national security through reducing and eliminating, in a safe and secure manner, a significant portion of the former Soviet Union's nuclear arsenal. Meanwhile, the focus has shifted from pursuing new negotiated arms control arrangements with the successor states of the Soviet Union to ensuring effective implementation of existing international agreements — in short, turning arms control pledges into deeds.

These new strategies share a common approach: they combine efforts to prevent the emergence of new dangers with measures to protect U.S. territory, forces, and interests in the event prevention fails. This chapter describes how DoD is implementing these strategies.

Counterproliferation

The danger that WMD might be used against U.S. forces in some conflict is not, unfortunately, theoretical. More than a score of countries — many of them hostile to the United States, its

friends, and allies — now have or are developing nuclear, biological, and/or chemical weapons and the means to deliver them. Over a dozen countries have operational ballistic missiles and others have programs to develop them. All potential threat nations are at least capable of producing biological and chemical agents. They might not have usable weapons yet, and they might not use them if they do. But in future conflicts, commanders will have to assume that U.S. forces are potentially threatened. And their abilities to confront these weapons were shown in the Persian Gulf War to be poor — passive defenses against chemicals were cumbersome, and against biological virtually nonexistent, while the ability to suppress Scuds — a potential delivery system for WMD — was extremely poor.

The danger posed by new possessor states is complicated because they may not respond to traditional deterrence approaches. Throughout the Cold War, deterrence efforts focused on the Soviet Union, whose force structure, doctrine, history, and mind set grew familiar to U.S. strategists. Deterrence approaches designed for the Soviet Union might not be effective against new possessors of WMD for two reasons. First, they can be expected to have different doctrines, histories, organizations, command and control systems, and purposes for their unconventional military forces. In addition, proliferators may have acquired such weapons for the express purpose of blackmail or terrorism and thus have a fundamentally different calculus not amenable to deterrence. For these reasons, new proliferators might not be susceptible to basic deterrence as practiced during the Cold War. New deterrent approaches are needed as well as new strategies should deterrence fail. Finally, any increase in the number of states with WMD raises the potential for accidental or unauthorized use.

Traditionally, the U.S. approach to deal with proliferation included political and diplomatic efforts to persuade countries it was not necessary or wise to acquire these weapons and export control denial to make it difficult for determined proliferators to acquire needed materials. Broader trends in technology mean that U.S. efforts at denial will not succeed in all cases. U.S. preference remains to handle proliferation through diplomacy and denial. Yet the Department's responsibilities demand development of military capabilities to protect U.S. forces against this new threat should it prove necessary in some future contingency.

The Department is determined to fulfill its responsibilities in the government-wide effort to deal with the danger posed by the proliferation of weapons of mass destruction. The proliferation problem has changed in some critical ways for which new tools are required, specifically the development of military capabilities to confront a regional opponent armed with these weapons, as well as strengthened abilities to prevent the acquisition of these weapons in the first place or to roll them back diplomatically where proliferation has occurred.

THE COUNTERPROLIFERATION INITIATIVE

The Initiative has two fundamental goals:

- To strengthen DoD's contribution to government-wide efforts to prevent the acquisition of these weapons in the first place or reverse it diplomatically where it has occurred. DoD contributes through marshalling its unique technical, military, and intelligence expertise to improve arms control compliance, export controls, inspection and

monitoring, interdiction of shipping for inspection, during periods of crisis, and otherwise strengthening the norms and incentives against acquisition in the first place:

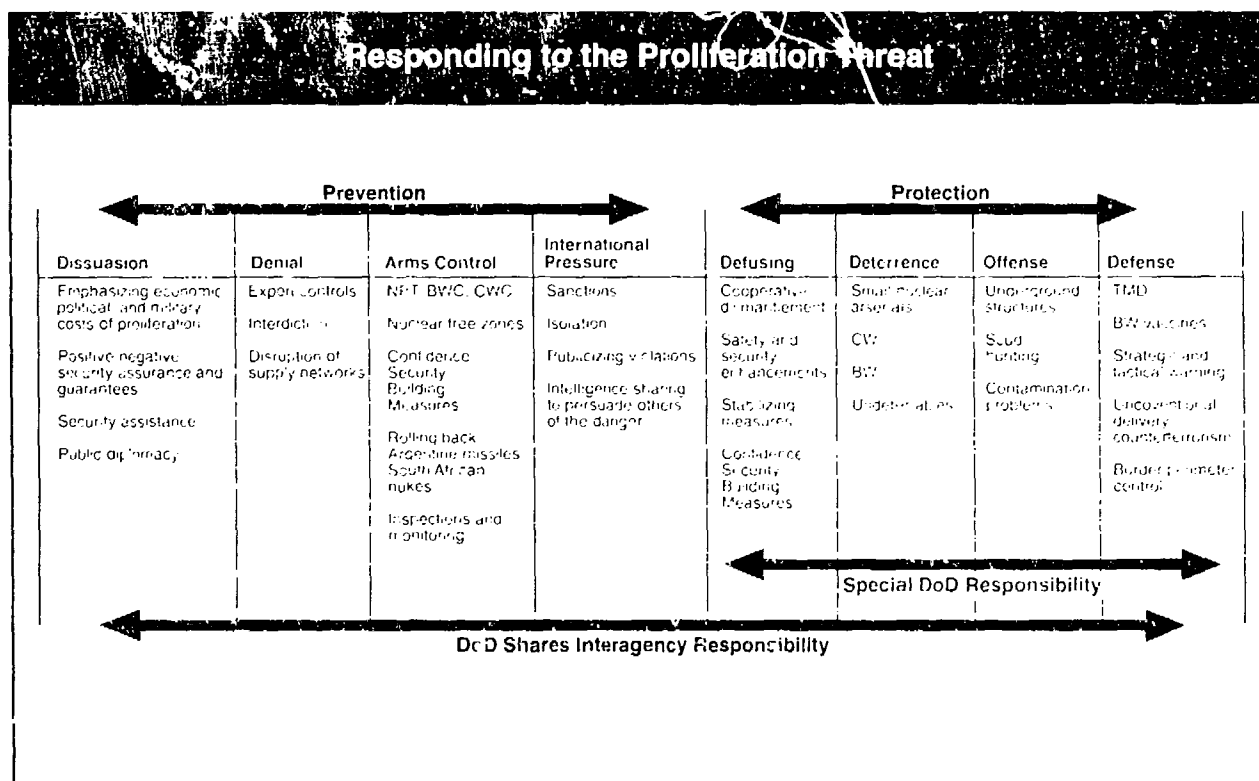
- To protect U.S. interests and forces, and those of its allies, from the effects of WMD in the hands of hostile forces through assuring that U.S. forces have the equipment, doctrine, and intelligence to confront an opponent with WMD on some future battlefield should that prove necessary.

The Department's efforts in these areas are two-fold. The prevention of the spread of weapons of mass destruction in the first place remains the preeminent goal of U.S. proliferation efforts. In this regard, the Secretary has directed that the skills of DoD personnel be focused in a more coordinated fashion to contribute to government-wide prevention efforts. At the same time, the commitment to greatly improve capabilities to protect U.S. forces from a regional opponent with weapons of mass destruction is a new element. Because of broader trends in the security environment and of increased technology diffusion, proliferation may still occur. U.S. military forces must have appropriate equipment and technology, planning and doctrine, and intelligence to successfully engage an opponent with WMD in a regional conflict. Where prevention is uncertain, prudence requires preparation to protect. All of DoD's activities in the proliferation field — prevention and the new focus on protection — combine to form the set of activities called counterproliferation.

Acquiring the full range of needed military capabilities for protection will reinforce traditional nonproliferation efforts by further reducing some of the incentives to acquire these weapons — the less military advantage the weapons confer, the less likely a clandestine acquisition effort will seem worth the effort, particularly as U.S. nonproliferation efforts maintain the cost. Even against an opponent who does acquire these weapons, the ability to fight effectively on a WMD-contaminated battlefield will strengthen the deterrent against the use of these weapons against U.S. forces.

CONCEPTUAL ELEMENTS OF A COMPREHENSIVE STRATEGY

DoD's support for government-wide efforts and development of needed military capabilities draws on a range of tools. This demonstrates a fundamental aspect of an effective strategy to grapple with proliferation — it requires the consistent, integrated application of the entire range of tools at the government's disposal. This range is illustrated in the following chart.



- **Dissuasion** — convincing non-WMD states that their security interests are best served through not acquiring WMD. This is best advanced through a U.S. leadership role of working with friendly countries to ameliorate their perceived vulnerability through binding them into common security structures. For example, strengthening regional security alliances and ties can make countries feel they need not provide for their security alone; and also security assistance can strengthen indigenous military capabilities in ways that meet legitimate defense needs but are not destabilizing.
- **Denial** — curtailing access to technology and materials for weapons of mass destruction through export controls or other tools. It is particularly important to strengthen multilateral export control regimes, as this enhances the effectiveness of the controls while reducing the economic costs to U.S. suppliers. Other, more direct techniques could include the disruption of black markets.
- **Arms Control** — reinforcing the Nuclear Non-Proliferation Treaty, the Biological and Chemical Weapons Conventions, nuclear-free zones, conventional arms treaties that stabilize regional arms races, and confidence- and security-building measures. These regimes strengthen the norms against acquiring these weapons and help to assure states that their neighbors are not acquiring them either.

- International Pressure — punishing violators with trade sanctions, publicizing and exposing companies and countries that assist proliferators, and sharing the intelligence to heighten awareness of the proliferation problem.
- Defusing — undertaking actions to reduce the threat from WMD already in the hands of selected countries — for example, agreements to destroy, inspect, convert, monitor, or even reverse their capabilities.
- Deterrence — bringing to bear military, political, economic, and commercial tools by the United States, its allies, and friends in an effort to persuade even the most ardent proliferator that the risks of the threat or use of WMD are not acceptable.
- Offense — protecting U.S. forces and responding to allied requests for assistance to meet legitimate security needs, by being prepared to seize, disable, or destroy WMD in time of conflict if necessary.
- Defense — responding to a potential adversary armed with WMD or missiles to deliver them by employing active and passive defenses that will mitigate the effects of these agents and enable U.S. forces to fight effectively even on a contaminated battlefield.

DOD COUNTERPROLIFERATION PROGRAMS

Prevention

Efforts to prevent proliferation have sought to reduce the imperatives to acquire these weapons by building up the norms against them, and then by making it difficult for determined proliferants to acquire the technology and knowledge needed to build them. These efforts can also serve to reverse WMD and missile programs through diplomatic means. DoD has long had a role in these important efforts.

Export controls remain one of the most important means to prevent the acquisition of these weapons, although their role must be reassessed much like other elements of foreign and defense policy in the altered strategic landscape. As the U.S. approach to the nations of the former Warsaw Pact becomes not adversarial but largely supportive, the U.S. perspective on export controls has fundamentally shifted. While controls on a limited number of the most sensitive items will be retained, the United States has determined that its security would not be impaired by the removal of controls on some widely available technologies.

The Administration is committed for both proliferation and economic reasons to export controls which apply equally to all countries who manufacture WMD technologies. The United States supports efforts to build a new regime to replace CoCom. Without consensus among the industrialized West, proliferant countries are more likely to be able to acquire weapon usable items, making denial efforts ultimately unsuccessful. Furthermore, if the United States were to maintain such controls unilaterally, its exporters would unfairly bear the economic costs of the

controls — losing not only the initial sale but often the development of relationships for spare parts, upgrades, and ultimately market share.

DoD also contributes to government-wide prevention efforts to strengthen nonproliferation regimes. DoD is providing better technical support to international inspection activities to assure their thoroughness and accuracy. This effort includes, for example, special capabilities DoD provided to the United Nation's Special Commission (UNSCOM) investigating Iraq's weapons of mass destruction, including USAF ballistic missile and U.S. Army Chemical Corps experts, as well as U-2 support for broad-area surveillance. In addition, DoD has led the development of an inspector training program for the implementation of the recently signed Chemical Weapons Convention (CWC). These efforts demonstrate DoD's commitment to updating and strengthening the nonproliferation regimes — making it more difficult for proliferant nations to acquire these weapons and their supporting technologies, quelling pressures within regions to acquire them, and ensuring the security of the United States and its friends and allies. An expanded discussion of export controls and nonproliferation regimes can be found at the end of this chapter in the section on Regime Implementation.

Most fundamentally, of course, other nations' choices about proliferation often are driven by broader security or political concerns. The United States is determined to weave proliferation concerns more deeply into the fabric of its overall foreign and defense policy toward all countries and regions, working particularly to affect the calculations of key states and to demonstrate that their security is best served by not acquiring these weapons; that working with the family of nations in the framework of nonproliferation norms is better than working against it.

Protection

Should proliferation occur and the United States find itself confronting an adversary in possession of WMD, U.S. interests and forces must be protected. Protection strategies must seek to convince the state that its own interests are best served by not using these weapons and, ideally, choosing at some point to roll back and eliminate the capability that they have acquired.

To assure that needed protection capabilities are developed, DoD is laying the groundwork in five different areas: policy, acquisition and technology base, military planning and doctrine, intelligence, and international outreach. First, under policy, the objective is to institutionalize and make official the counterproliferation mission. The President has directed the Secretary of Defense to make military preparations to protect U.S. forces against weapons of mass destruction. Following from that, DoD has amended — or is amending — all of the standard guidance documents by which the Secretary of Defense directs the armed forces, the Services, the CINCs, and the acquisition community toward his key priorities.

The creation of a new Assistant Secretary of Defense for Nuclear Security and Counterproliferation (ASD(NS&CP)) within OSD(Policy) assures this issue proper visibility. Under the ASD(NS&CP) is the Counterproliferation Policy organization, as well as the Defense Technology Security Administration (DTSA). This restructuring is designed to provide increased focus, visibility, and resources to DoD's efforts in countering proliferation.

Second, in the acquisition and technology base, the Department has conducted a survey of the Services and the defense agencies and their programs relevant to this mission in order to identify which programs to change, and what new programs to create. Some examples:

- DoD is studying improved, non-nuclear, penetrating munitions to deal with hardened underground installations which contain WMDs;
- After the difficulties in finding Scuds during the Gulf War, DoD is developing better ways to hunt mobile missiles; and
- The newly reoriented Ballistic Missile Defense Organization concentrates on developing the capability to protect against theater ballistic missile threats.

DoD's concerns are by no means limited to the nuclear threat. Chemical and biological weapons pose serious and in some ways quite different problems. DoD is developing better capabilities to protect U.S. military forces and civilian populations from biological and chemical weapons attack. A new Joint Office will oversee all DoD biological defense programs, the first time the Department has organized its collective expertise to deal with biological defense problems.

The United States has also proposed a clarification in the Antiballistic Missile (ABM) Treaty, which would allow the development and testing of a theater missile defense (TMD) system to meet a real threat without undermining the goals of this important arms control agreement. This adjustment is an essential element of the counterproliferation strategy.

The Assistant to the Secretary for Atomic Energy is coordinating acquisition's counterproliferation efforts, leading the development of an acquisition strategy to focus technology development efforts. This strategy should not require much new procurement — rather it is pinpointing key gaps and building on existing programs.

Regarding military planning and doctrine, the Chairman and the CINCs will initiate dedicated planning efforts aimed at the specialized needs of contingencies involving weapons of mass destruction. One example is contamination. If a site that contains nuclear, chemical, or biological weapons, or the materials to produce those weapons is targeted, the potential for contamination in the surrounding area is great, and its unique challenges and implications need to be analyzed before a war begins. Military planning for counterproliferation operations during conflict is beginning, including a range of military options to delay, disrupt, or deny the deployment of WMD, and to disrupt or destroy the supporting infrastructure for WMD and missile capabilities. These challenges are quite unique among different regions and thus plans must be tailored to the challenges posed. At the most fundamental level, power projection and traditional military doctrine may need to be altered in light of the significant probability that an opponent would have WMD.

Intelligence efforts to combat proliferation have in the past been focused primarily on prevention — monitoring exports, treaty compliance, and indigenous production capabilities, for example. Part of DoD's Counterproliferation Initiative is to expand intelligence efforts to the protection role, ensuring that the sufficient and appropriate information is available to commanders in the field and strategists and policymakers around the world.

Operation Desert Storm demonstrated some weaknesses in this area. After the Persian Gulf War, Iraq was found to have had a much more extensive and advanced nuclear weapons program than initially realized. Moreover, wartime attacks had failed to destroy Iraq's biological and chemical warfare capabilities. Improved counterproliferation intelligence will help prevent such failures. Intelligence must be useful militarily, not only diplomatically.

As an example, a joint agreement is being developed between the Deputy Secretary of Defense and the Director of Central Intelligence to create a Deputy Director for Military Support in the Non Proliferation Center (NPC). The NPC — the focal point in the intelligence community for the collection and analysis of intelligence related to proliferation — recognizes that one of its jobs is supporting military needs, in addition to its traditional work in support of diplomatic nonproliferation efforts. This year, the number of DoD personnel in the NPC will triple. Moreover, a corresponding focal point is being created in the Defense Intelligence Agency to assure an appropriate focus within that organization on military intelligence for countering WMD. Getting the needed intelligence will require the development of some new capabilities, including battlefield detectors, long-range detectors, and special intelligence methods to detect clandestine facilities.

In the international cooperation arena, America's allies and security partners around the world also confront a growing WMD threat. The United States has launched an initiative with NATO to increase alliance efforts against the proliferation of weapons of mass destruction. This increase would represent a major new post-Cold War mission for the Atlantic alliance. The Secretary discussed this proposal with the Defense Ministers of the NATO countries, and the President and other heads of state approved the January 1994 summit, an alliance-wide effort to examine the emerging proliferation threat in all its political and defense aspects, including an evaluation of capabilities needed to deal with WMD in the event of an actual confrontation. Cooperation with Japan continues on deployment of theater missile defense systems there, and possibly on developing such systems together.

In short, important efforts are under way to implement the Counterproliferation Initiative and to assure that DoD is doing its part in support of the President's overall effort to grapple with the challenge posed by proliferation. These initiatives represent creative and pragmatic efforts to face the new challenges posed by proliferation in this greatly changed strategic environment.

Cooperative Threat Reduction

In the former Soviet Union, the continued existence of a superpower's nuclear arsenal amidst revolutionary change creates the potential for several dangerous outcomes. One possibility is the creation of new nuclear states. For example, a nuclear-armed Ukraine would be the third-largest nuclear power in the world, possibly engendering an entirely new nuclear balance lacking the relative stability and predictability of the past or even the present. Furthermore, the potential for disintegration of Russia itself, and the dispersal of the nuclear capabilities located in various republics, must not be underestimated. The revolutionary changes taking place in the New Independent States will challenge and, in some cases, erode the defunct Soviet regime's authoritarian and highly centralized controls on the technology, materials, and expertise needed to develop nuclear and other weapons of mass destruction. This, in turn, could lead to accidents,

unauthorized actions, or terrorism. Another hazard is the possible leakage of weapons or the materials to make them to would-be proliferators outside the FSU. Finally, the potential exodus of weapons scientists and their technical knowledge is a significant danger in an economy where they face unemployment at home, but potentially high demand for their expertise abroad.

The old tools of deterrence through strength, balance of power, and arms control negotiations are not likely — by themselves — to effectively address these dangers. New approaches are required, which take advantage of the spirit of cooperation between the former superpower adversaries, and which provide incentives and assistance for the inheritors of the Soviet nuclear arsenal to take the appropriate steps toward its safe and secure reduction and ultimate disposition by a single nuclear successor state. The United States and the FSU have moved from an era of arms control negotiation and agreement to an era of arms control implementation. Rather than obtaining more arms control pledges, U.S. efforts must now be oriented to turning pledges into deeds.

U.S. efforts to prevent the spread of nuclear forces of the former Soviet Union among the former republics and beyond cover a broad range of activities. In addition to pursuing the implementation of existing arms control treaties, DoD is actively engaging its Russian and other FSU counterparts to develop areas of common interest and action to reduce the threat posed to the United States by post-Soviet nuclear weapons and to accelerate the deactivation of weapons slated for destruction under current arms control pledges. The Nunn-Lugar Program, which provides U.S. expertise and material assistance to Belarus, Kazakhstan, Russia, and Ukraine to help them perform on their pledges that nuclear weapons be returned to Russia and dismantled, has supported several destruction and conversion activities.

Should these preventive efforts fail, however, U.S. security and that of its allies must be protected. The Nuclear Posture Review, described in a later chapter, will help DoD determine what U.S. nuclear posture is best suited to deter the threats of the post-Cold War world. The Ballistic Missile Defense program will augment U.S. capabilities to defend its forces against nuclear and other possible threats from the weapons of the former Soviet Union.

The United States has unprecedented opportunities to reduce potential future threats to national security through programs of cooperation with, and assistance to, the new independent states. Over the next several years, the Russian Federation, Belarus, Ukraine, and Kazakhstan must implement their respective arms reduction commitments under Strategic Arms Reduction Talks (START) I, including obligations they agreed to in the Lisbon Protocol. In addition, the Russian Federation must implement its START II obligations and President Yeltsin's and former President Gorbachev's responses to the U.S. Presidential Nuclear Initiatives. Taking into account all of these commitments, hundreds of strategic offensive arms and perhaps over 13,000 nuclear warheads will be dismantled. The completion of complex logistical, engineering, and technical tasks is required to ensure that such dismantlement proceeds as rapidly as possible, yet safely and securely. The Russian Federation also must ensure the safety and security of its remaining nuclear arsenal and meet its commitment in the CWC to entirely destroy the huge chemical arsenal inherited from the Soviet Union.

Implementing these tasks would be difficult even for states that were not experiencing the massive economic, political, and military dislocations that the new independent states face

today. A failure by the NIS to carry out these tasks could have grave national security ramifications for the United States. The United States could be forced to devote significant additional resources to deter or defend against weapons of mass destruction that should have been dismantled and destroyed. And the nation would face an increased risk that the nuclear weapons of the former Soviet Union could be involved in accidents, become building blocks for nuclear arms in new nuclear weapon states, or even fall prey to terrorist groups. The Cooperative Threat Reduction Initiative is designed to prevent this scenario from occurring, and it also does so in ways that would have been unimaginable only a few years ago.

NUNN-LUGAR PROGRAM

First and foremost, the Department of Defense, whose funds support the Nunn-Lugar program, plays a critical role in U.S. efforts to provide practical and effective assistance to the Russian Federation, Belarus, Ukraine, and Kazakhstan in the safe and secure transportation, storage, and elimination of nuclear, chemical, and other weapons of mass destruction and the prevention of weapons proliferation. The Nunn-Lugar program directly hastens the reduction of the threat to the United States. Its existence and the projects carried out under its auspices also act indirectly to set a cooperative agenda for the FSU, garner the attention of their leaders, and focus their efforts. Also, it provides an enhanced degree of visibility into the nuclear activities of these countries.

During the past year, the Department's management responsibilities were reorganized to improve the development and execution of the Nunn-Lugar program. One important move was the designation of the ASD(NS&CP) to provide overall policy guidance as well as day-to-day oversight. DoD has led the effort to accelerate Nunn-Lugar implementation — accelerating U.S. efforts with the eligible states to identify specific assistance requirements, conclude the necessary implementing agreements, and deliver the agreed assistance in the most cost-effective and timely manner possible.

As a result, by October 1993, the Department had notified Congress of proposed obligations totalling nearly \$790 million (of the \$800 million allocated for FY 1992 and FY 1993) in Nunn-Lugar funds for specific projects in the eligible states, a three-fold increase over the January 1993 level. More importantly, in the same period, the total assistance committed under agreements concluded with the Department and for which implementation is actually under way rose from \$108 million to over \$420 million — a four-fold increase.

For Nunn-Lugar assistance to be provided, the President must certify that recipient nations are meeting certain standards of conduct. They include forgoing military modernization programs that exceed legitimate defense requirements, facilitating U.S. verification of weapons destroyed using Nunn-Lugar assistance, a commitment of fulfilling arms control obligations, contributions toward the costs of fulfilling these commitments, and respect for human rights. DoD will continue to work with other governmental agencies to ensure that Nunn-Lugar assistance is provided to only those countries which fulfill the necessary conditions.

Looking to the future, the United States of course cannot and should not bear the entire dismantlement cost for the four New Independent States, and the United States will continue to insist that these four states do their part. The expansion of the bilateral assistance by key

Western allies and Japan to the New Independent States for demilitarization and defense diversification will remain a U.S. priority, along with improving the coordination of those bilateral efforts with the U.S. program. With U.S. encouragement, Japan has now allocated \$100 million to a cooperative threat reduction program with the NIS, similar to the U.S. approach.

Nevertheless, it is clear that requirements for Nunn-Lugar assistance will continue beyond the additional \$400 million authorized by Congress for FY 1994. The emphasis on key areas, such as assistance for the elimination of strategic offensive arms, is expected to continue. For example, current Nunn-Lugar assistance to the Russian Federation takes into account only START I dismantlement requirements, not the additional and significant requirements for Russian implementation of START II. But there are other large projects receiving Nunn-Lugar assistance, such as the planned Russian storage facility for fissile material from dismantled nuclear weapons, and the environmentally safe destruction of Russian chemical weapons that may require a sustained and multiyear effort if they are to succeed. And additional, innovative ways are being explored to use Nunn-Lugar resources to keep the process of denuclearization and demilitarization on track in the NIS.

DEFENSE CONVERSION

The Department of Defense is also facilitating demilitarization and nonproliferation in the FSU, with new and innovative approaches to help key NIS convert their military industries, technologies, and capabilities into civilian activities. Such activities promote the orderly downsizing of the mammoth military-industrial complex inherited from the Soviet Union, reorient those capabilities to peaceful scientific and other civilian endeavors, and promote the economic progress and stability of these states. A number of U.S. government agencies conduct a wide array of activities that directly and indirectly support the defense conversion efforts of the former Soviet Union. These include several major programs by the Department of Commerce to strengthen American and former Soviet business relations, and the programs of the Agency for International Development and the Department of State to support Russia's economic reform, privatization, and officer resettlement, and the Arms Control and Disarmament Agency's Entrepreneurial Training workshops for Russian nuclear weapons scientists. They also include ongoing cooperative research activities between scientists and engineers in the Department of Defense, the Department of Energy, the National Aeronautic and Space Administration, and their Russian counterparts.

Direct DoD support to defense conversion in the NIS comes primarily from the Nunn-Lugar program. In FY 1993, DoD committed \$20 million in Nunn-Lugar funds to various defense conversion projects in Belarus, and \$20 million to a program in Russia to convert one or more defense industrial facilities to producing prefabricated housing. The first orders from this latter project will provide housing for demobilized officers from the Strategic Rocket Forces. In FY 1994, the Department intends to fund several specific industrial defense conversion projects teaming U.S. partners with selected Russian firms formerly involved in the production of weapons of mass destruction. In addition, the Department will establish the Defense Enterprise Demilitarization and Restructuring Fund, newly authorized by Congress, which is designed to attract U.S. private capital to the defense conversion effort in the NIS.

DoD activities related to defense conversion in the NIS are coordinated with other U.S. agencies and through the U.S. component of the U.S.-Russian Commission on Conversion of Defense Industry, established within the framework of the Joint U.S.-Russian Commission on Economic and Technological Cooperation. It is chaired on the U.S. side by the Deputy Secretary of Defense. This commission — and the expected counterpart arrangements with Ukraine, Belarus, and Kazakhstan — provides a senior channel of communication between senior officials of the governments, which promotes cooperation in defense conversion. Through the Commissions, the governments which inherited the legacy of Cold War defense economies are able to share their experiences in defense restructuring, rationalizing defense planning, and defense industrial data base management. They are also able to discuss the financial, structural and, in the case of the NIS, economic assistance requirements for effective conversion.

ACCELERATED DEACTIVATION

To further reduce the threats posed by the the large number of strategic nuclear arms in the states of the former Soviet Union, the United States, in parallel with its offer of dismantlement assistance, has proposed concrete steps to achieve accelerated deactivation of strategic systems slated for elimination under START. The Department, leading by example, has already removed over 90 percent of ICBM and submarine launched ballistic missile (SLBM) warheads whose launchers will be eliminated during the 7-year START reduction period. DoD expects to complete the removal of all warheads from these missiles by the end of 1994 and remove all such missiles from their launchers by the end of 1995. DoD has also begun elimination of deactivated ICBM launchers. The heavy bombers required to be eliminated under START have already been retired and transferred to the elimination facility where the oldest model B-52s are being destroyed.

At the same time, DoD is working closely with the Russian Federation, Belarus, Ukraine, and Kazakhstan to encourage similar accelerated deactivation of strategic offensive arms on their territory. The Department has been active in promoting practical approaches to resolve issues among some of these former Soviet states so that the process of actually removing the military threat from these arms can proceed as quickly as possible.

Regime Implementation

The United States is a participant in a wide range of arms control treaties and other regimes which seek to address the new nuclear dangers. U.S. counterproliferation and threat reduction initiatives complement, but do not replace, the continuing requirement to support effective implementation of existing arms control agreements and to prepare for implementation of those pending ratification or entry into force. The Department of Defense remains committed to effective implementation, both to ensure that the United States can realize the political and security benefits of existing arms control and confidence-building agreements and, where appropriate, lay the necessary groundwork for possible future negotiated measures.

START AND START II

With signature of the Lisbon Protocol in May 1992, the Russian Federation, Republic of Belarus, Ukraine, and Kazakhstan became parties to START I. Since then, the United States has been

working with them to prepare for smooth and effective implementation of the Treaty once it enters into force. During 1993, the United States held two 5-week sessions with the other START I parties in the Joint Compliance and Inspection Commission to discuss procedural arrangements and detailed application of the verification and implementation provisions of the Treaty. Through such meetings, which include active participation by Department of Defense representatives, common approaches are emerging that can ensure effective execution of the Treaty and realization of its security and political benefits. Through these and other contacts, the United States continues to encourage Ukraine's prompt unconditional ratification of START I and its accession to the Nuclear Non-Proliferation Treaty (NPT) as a non-nuclear weapon state. After these steps are accomplished, it will be possible for all parties to exchange instruments of ratification, and the Treaty will enter into force. In November 1993, the Ukrainian legislature approved the Treaty but only after linking it to various conditions and deferring NPT adherence.

On January 14, 1994, Presidents Clinton, Kravchuk, and Yeltsin signed a trilateral statement outlining the measures each of their respective government will take to facilitate the removal of all nuclear weapons from Ukraine. Among other measures, the statement specifies prompt compensation by Russia to Ukraine for the highly enriched uranium in those weapons, identified the security assurance that the United States, Russia, and the United Kingdom will provide to Ukraine once it accedes to the NPT as a non-nuclear weapon state, and reiterates Ukraine's commitment to eliminate all nuclear weapons, including strategic offensive arms, from its territory by the end of the START I Treaty's 7-year reduction period.

START II, signed by the United States and the Russian Federation in January 1993, will result in the elimination of all ICBMs equipped with multiple independently targetable reentry vehicles, or MIRVs. Elimination of these systems, particularly the heavy ICBMs of the former Soviet Union, will increase strategic stability by removing the incentive either side would have, during a crisis, to use such high-value assets before their potential destruction. In addition, START II will reduce dramatically the overall number of strategic nuclear warheads deployed on either side to 3,500 or fewer — approximately one-third the size of the arsenals before signature of START I.

The United States continues to encourage the Russian Federation to ratify START II as soon as practicable. START II builds upon START I: for example, all START I provisions, including the verification regime, apply to START II except where they have been explicitly modified by the latter. Consequently, START II cannot enter into force before START I.

INTERMEDIATE-RANGE NUCLEAR FORCES

The United States has concluded that all 12 New Independent States of the former Soviet Union are successors to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter Range Missiles (the INF Treaty). For their part, all 12 states have acknowledged that they are successors to the Treaty. Hence, all are bound by the Treaty's prohibitions on possession, production, and testing of ground-launched cruise and ballistic missiles with ranges between 500 and 5,500 kilometers. All such missiles that the United States and the Soviet Union declared to be in their possession at the time the Treaty entered into force in 1988 were eliminated prior to June 1, 1991 — before the breakup of the former Soviet Union.

ANTI-BALLISTIC MISSILE TREATY

During the past year, the Administration has reviewed its policy on U.S. ballistic missile defense (BMD) requirements and the future of the ABM Treaty. One result of this review has been the reaffirmation of U.S. commitment to the Treaty, as evidenced by the Administration's statement in July 1993 that the narrow or traditional interpretation of the Treaty is the legally correct interpretation.

During 1993, the President decided that the United States will accept as ABM Treaty Parties any of the NIS that want to be a Party to the Treaty. Exactly which NIS (in addition to Russia) will be Parties to the Treaty has not been finalized. The President also decided to pursue an agreement with ABM Treaty Parties that would clarify the distinction between ABM systems, which are limited by the Treaty, and non-ABM systems, which are not. Such an agreement will allow the deployment of effective U.S. TMD systems for the protection of U.S. forces, allies, and friends against the growing theater ballistic missile threat. These two agreements that would update and clarify the ABM Treaty are being pursued in the Standing Consultative Commission.

CONVENTIONAL FORCES IN EUROPE (CFE) AND OPEN SKIES TREATIES

The Department of Defense continues to play a very active role in verification and implementation of the CFE Treaty. Even in the post-Cold War era, these efforts are necessary to realize the Treaty's contribution to stability through reducing levels of conventional armaments throughout Europe and ensuring that there can be no destabilizing concentrations of forces in the region. In 1993, the On-Site Inspection Agency (OSIA) participated in over 75 inspections under the Treaty in states of the former Warsaw Pact, and escorted foreign teams during 15 inspections of U.S. forces in Europe.

DoD also is preparing for implementation of the Open Skies Treaty, which was recently ratified. The Treaty will permit states parties to overtly observe other parties and collect photographic and other specified data, thereby strengthening of peace, stability, and cooperative security through improved openness and transparency. The Treaty can also facilitate monitoring of compliance with existing or future arms control agreements and enhance international conflict prevention and crisis management. The USAF has completed outfitting the first dedicated Open Skies aircraft, which is ready for operational use once the Treaty enters into force. The aircraft is now participating in a program of trial flights with other treaty signatories.

NUCLEAR NON-PROLIFERATION TREATY (NPT)

The 1968 Treaty on the Non-Proliferation of Nuclear Weapons establishes certain obligations for both nuclear weapons and non-nuclear weapons states regarding the transfer, manufacture, or acquisition of nuclear weapons or other nuclear explosive devices. It allows all parties to participate in the exchange of equipment, materials, and scientific and technological information for the peaceful uses of nuclear energy. The Treaty mandates a review conference 25 years after entry into force (1993) to decide whether the Treaty should continue in force indefinitely, or be extended for a fixed period. This conference will take place in 1995. DoD has been represented at all Preparatory Committee meetings to prepare for this NPT Extension Conference and is strongly behind the U.S. position to support indefinite and unconditional extension of the Treaty.

CHEMICAL WEAPONS CONVENTION

Signed on January 13, 1993, by over 130 countries, the CWC currently has 154 signatories and enters into force 180 days following the 65th ratification (4 countries having ratified to date). The CWC bans the use, development, production, acquisition, stockpiling, and transfer of chemical weapons. Since February 1993 and until entry into force (EIF) (projected January 13, 1995), the CWC Preparatory Commission (PrepCom) is meeting to complete the details necessary to have the Organization for the Prohibition of Chemical Weapons (OPCW) fully operational at entry into force. DoD is actively participating throughout this PrepCom process by providing a full range of experts from inspections procedures to treaty data management. As mandated under the CWC, DoD will declare and destroy the U.S. chemical weapon stockpile, as well as, the nonstockpile (former production facilities, trainers, etc.) items.

BIOLOGICAL WEAPONS CONVENTION (BWC)

The President has directed that the U.S. promote new measures that provide increased transparency of potential biological weapons-related activities and facilities in an effort to help deter violations of and enhance compliance with the Biological Weapons Convention (BWC). DoD is a key player in evaluating a range of compulsory data submission and inspection measures.

EXPORT CONTROL REGIMES

The Administration has committed itself to harmonize domestic and multilateral export controls to the greatest extent possible. Unilateral dual-use export controls and policies are under review and will be eliminated unless such controls are essential to national security and foreign policy interests. Control levels will also be reviewed to assure their appropriateness. For example, CoCom control levels for computers and telecommunications were recently liberalized and a new definitional threshold was set for supercomputers. These changes reflect global technological advances and U.S. interest in assisting the modernization of the former Soviet Union while at the same time keeping tight control on those critical technologies which have the potential to negate or severely challenge areas of U.S. military superiority.

Overall, the United States will seek to maintain and strengthen controls on so-called chokepoint technologies. These controls can still have a dramatic effect on slowing the pace of programs and raising their costs. This contribution is important to the ongoing efforts to focus and strengthen key international export control regimes like the Missile Technology Control Regime (MTCR), the Nuclear Suppliers' Group (NSG), and the Australia Group and to create a new international regime to replace CoCom.

Missile Technology Control Regime

The only multilateral missile nonproliferation regime, the MTCR is a voluntary arrangement of 23 states including the United States, Canada, their major trading partners in Europe, Japan, Australia, New Zealand, Argentina, and Hungary. The U.S. government strongly supports this regime which seeks to control exports of equipment and technology — both military and dual use — that are relevant to missile development, production, and operation.

Nuclear Suppliers' Group

This group consists of 27 nuclear suppliers and seeks to control exports of nuclear materials, equipment, and technology, both dual-use and specially designed and prepared. Russia is a member of this group and therefore bound by its controls, though other former Soviet nuclear republics — particularly Belarus, Ukraine, and Kazakhstan — along with other major suppliers like China and Brazil, are not. The U.S. government views observance of the NSG guidelines by these states as an important means of stemming the flow of nuclear materials and technologies.

Australia Group

An informal arrangement of 25 industrial countries including the United States, Canada, most of Western Europe, Japan, New Zealand, and Australia, it attempts to prevent the spread of chemical and biological weapons material and technology. The Group holds information exchanges and prepares lists of chemical precursors, microorganisms, and related equipment for member countries to control by export licensing and monitoring. DoD's contribution to U.S. participation in the Australia Group has paralleled its participation in the negotiation of and the implementation planning for the CWC.

The United States is working to strengthen these regimes through prudent expansion of the membership, sharpening the lists of mutually controlled items, and improving coordination and intelligence information exchange to increase the effectiveness of the regimes. But challenges remain on the multilateral front. DoD is a key player in the interagency effort to replace CoCom, which was targeted against the now defunct Warsaw Pact and its allies, with a new regime to address post-Cold War security concerns. This new regime would complement existing nonproliferation regimes, filling gaps in coverage and providing greater transparency in trade in advanced conventional weapons. It would prevent transfers of militarily critical technology to states of particular concern and permit better monitoring of such trade in regions of instability such as the Middle East. Russia would be expected to become part of the new regime from the start, and other countries willing to observe nonproliferation and export control regimes would be invited to join. If this regime is successful, with Russia fully participating in the counterproliferation effort, it promises to fill important gaps and significantly improve the overall counterproliferation effort.

U.N. SPECIAL COMMISSION ON IRAQ (UNSCOM)

UNSCOM was established pursuant to United Nations Security Resolution 687 in 1991 for the purpose of eliminating Iraq's capabilities vis-a-vis weapons of mass destruction and ballistic missiles with a range greater than 150 kilometers, and ensuring that Iraq does not reacquire these capabilities. In the nuclear area, UNSCOM provides assistance and cooperation to the International Atomic Energy Agency (IAEA). DoD has taken the lead in providing technical expertise in support of long-term monitoring efforts in Iraq.

Conclusion

The proliferation of mass destruction weapons was identified as the primary threat to U.S. security in the Bottom-Up Review undertaken in the summer of 1993. The Department has developed two efforts to address this threat. On the one hand, we are assisting the republics of the former Soviet Union to deal responsibly and safely with their nuclear legacy, and on the other hand, we are working to limit the dangerous aspects of the diffusion of WMD technology around the world. DoD's initiatives in threat reduction and counterproliferation respond to these challenges and demonstrate concretely the measures the Department is taking to meet the challenges of the new era.

BALLISTIC MISSILE DEFENSES

Introduction

In the new security era, a new approach to Ballistic Missile Defense (BMD) is required. It involves reorienting the BMD program to reflect the fact that the Cold War is over and the threat it posed to the security of the United States and its friends and allies is greatly reduced. Of increasing importance is the threat of theater ballistic missiles and weapons of mass destruction (WMD). This change also reflects the Administration's view about the reduced need for early deployment of a national missile defense and a desire to fund overall missile defense research and development at a sustainable level. Furthermore, developing deployable advanced theater missile defenses (TMD) to protect U.S. forward-deployed forces, allies, and friends is an important element of the Counterproliferation Initiative.

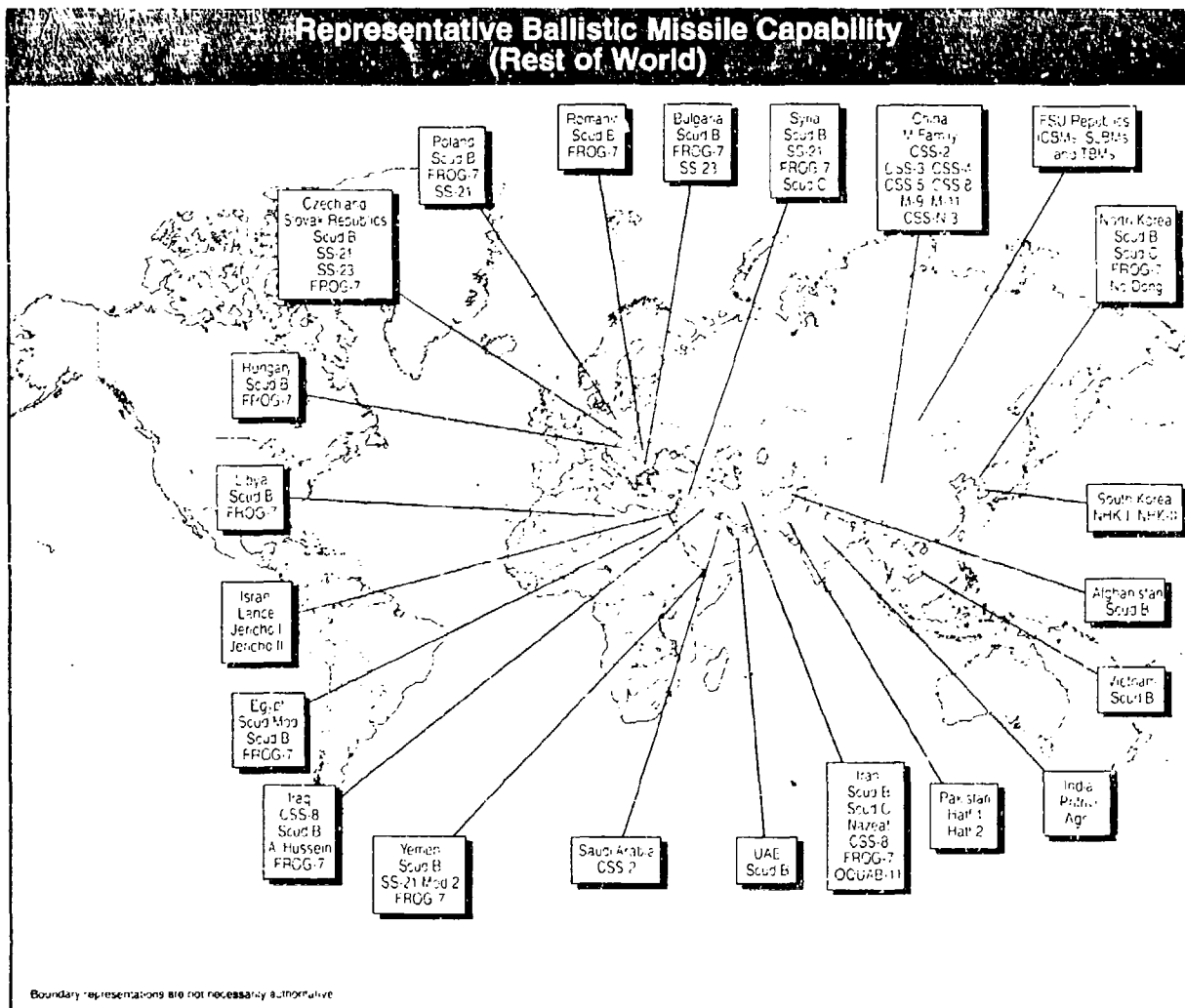
The Role of Ballistic Missile Defenses in Meeting New Dangers

The importance of ballistic missile defenses in meeting the new security dangers is underscored by the growing proliferation of weapons of mass destruction and ballistic missiles. Currently, more than 25 countries, many of which are adversaries of the United States and its allies, possess or may be developing nuclear, chemical, or biological weapons. This situation is exacerbated by the difficulties of controlling the spread of sensitive technologies supporting ballistic missile development. Today, more than 15 nations have ballistic missiles. By the year 2000, perhaps 20 nations may have them. Many of the countries that are developing or acquiring ballistic missiles are also seeking to acquire, or already have, weapons of mass destruction. Ballistic missile technology is already widely available and much of its international trade remains essentially outside the bounds of Western controls. North Korea and China, for example, are particular concerns in this area.

The development and deployment of defenses to protect against these threats — initially against theater ballistic missiles and later, if necessary, against long-range threats to the United States that could emerge after the turn of the decade — are important parts of U.S. defense strategy that emphasize response to a wide spectrum of potential challenges and regional conflicts. Ballistic missile defenses, along with conventional and nuclear capabilities, also contribute to national strategy by strengthening deterrence of other nations, dampening incentives to escalate, and preserving freedom of action.

Finally, missile defenses will support broader efforts to discourage the spread of ballistic missile technologies and weapons of mass destruction. The threat of ballistic missile use in regional conflicts brings to the forefront the political and military value of ballistic missile defenses. Effective missile defenses can reduce incentives for proliferators to develop, acquire, or use ballistic missiles and weapons of mass destruction. Defensive missile systems reduce the value of offensive missile systems by destroying attacking missiles, thus helping to deny accomplishment of a belligerent's objectives. The ability to extend protection to allies and friends in a region can have a significant effect toward mitigating their desire to produce their own offensive WMD systems and can encourage their willingness to act conventionally with

the United States in any conflict. In this way, missile defenses can help undermine the military and political utility of missile systems and discourage countries from developing and acquiring them.



DANGERS OF WEAPONS OF MASS DESTRUCTION

During the Cold War, the principal nuclear danger was the threat of a massive strategic exchange with the Soviet Union. In recent years, this threat has receded, although the Russian nuclear arsenal remains large and is a concern. A new nuclear danger stems from the possibility of a few nuclear weapons in the possession of a regime hostile to the United States — renegade states, terrorist organizations, or aggressor nations. Moreover, the past several years have witnessed growing efforts by developing states, including some unfriendly to the United States, to acquire nuclear, biological, and chemical weapons. In some instances, regimes such as North

Korea are developing an indigenous capability to produce nuclear weapons. Many of these nations already have some form of ballistic missile capability.

The combination of weapons of mass destruction with theater ballistic missiles poses a unique threat to managing future regional crises. An aggressor state may in the future seek to limit freedom of action by precluding or limiting conventional Western military aid to an ally or friend simply by threatening a missile strike. The threat of a nuclear, chemical, or biological attack may intimidate a neighboring nation, thereby discouraging it from seeking U.S. protection or participating with the United States in the formation of a defensive coalition. The United States cannot accept a situation in which the threat or use of ballistic missiles armed with WMD constrain its ability to project military forces to meet commitments abroad and achieve national security objectives. U.S. forces, once deployed, must have TMD defense capabilities to deal effectively with ballistic missile threats.

Over the longer term, hostile states possessing long-range ballistic missiles could directly threaten American cities in an attempt to deter or otherwise restrain the United States from pursuing political, diplomatic, or military initiatives designed to resolve a crisis. With weapons of mass destruction, even small-scale ballistic missile threats to the United States would raise dramatically the potential costs and risks of military operations, undermining conventional superiority and threatening the credibility of U.S. regional security strategy.

REGIONAL DANGERS

With the demise of the Soviet Union, threats to stability in key regions throughout the world have become one of America's principal military concerns. Examples of these threats include regional aggressors, like Iraq in 1990, and ethnic and religious civil wars, as in the former Yugoslavia. The threat of the use of ballistic missiles in regional conflicts, especially in the Middle East and Southwest Asia, has grown enormously over the past two decades. Ballistic missiles have been used in five regional conflicts since 1973. Most recently, during the Persian Gulf War, Iraq launched nearly 90 modified Scuds against Israel, Saudi Arabia, and U.S.-led coalition forces. The Gulf War presages the type of major regional conflicts to prepare for — a theater of conflict far from home, against adversaries well armed with advanced conventional and unconventional weaponry. The proliferation of ballistic missiles and weapons of mass destruction increases the danger to U.S. forces and allies in future potential conflicts.

Ballistic missile defenses can contribute to U.S. military strategy for major regional contingencies in a number of critical ways. During Operation Desert Storm, several important lessons were learned about the political and military value of theater ballistic missile defenses. First, Iraq demonstrated that missiles armed only with conventional warheads were effective terror weapons. The Scud attacks on civilian population centers caused a refocus of coalition military strategy to emphasize protection of innocent lives and other nonmilitary assets. This emphasis necessarily constrained options for employing available allied forces in other operational missions. Such a capability for protecting noncombatants will become increasingly vital to the U.S. leadership role in the world as ballistic missiles proliferate and aggressors attempt to deter the formation of defensive coalitions through the threat of missile attacks. Second, Cold War manifestations of deterrence may not always apply in regional conflict situations. Instead of being deterred by the possibility of Israeli retaliation against Scud

attacks, Iraq sought to provoke such a response to change the political dynamics of the U.S.-led coalition and thus influence the outcome of the war. In this type of situation, the presence of defenses can be decisive in avoiding further escalation. In the same vein, missile defenses also reduce pressures on U.S. military and political leaders involved in a regional conflict to alter their campaign or war plans because of the threat or use of ballistic missiles. In the absence of effective defenses, such carefully laid plans could be disrupted or delayed. Third, the United States experienced great difficulty in locating and destroying mobile missile systems. Despite the fact that the coalition had total air supremacy during Operation Desert Storm, it was unable to effectively locate Iraq's mobile launchers and halt Scud attacks.

All these factors lead to the conclusion that more effective TMD are required to include improving existing systems, acquiring new systems, and improving the capability to target mobile missiles — the Patriot system's performance in the Gulf War notwithstanding. In the future, there will be more sophisticated ballistic missile threats with development clearly in the direction of systems of increasing range, speed, accuracy, and lethality — including being armed with weapons of mass destruction.

Ballistic Missile Defense Priorities and Programs

In recognition of the radically altered international security environment, the Department has changed the name of the Strategic Defense Initiative Organization (SDIO) to the Ballistic Missile Defense Organization or BMDO. This change in name signifies a reorientation in ballistic missile defense policy from Cold War objectives and debates to the new dangers of the post-Cold War era. Also changed is the chain of command for BMDO. Since its inception in 1984, SDIO had reported directly to the Secretary of Defense. Now, BMDO will report to the Under Secretary of Defense for Acquisition and Technology. This organizational change reflects BMDO's new emphasis on acquiring and fielding effective TMD capability as quickly as possible. It also underscores the transition of certain TMD programs from research to systems acquisition, and will allow the Department to manage work on ballistic missile defense in a manner appropriate to its place in the overall defense program.

To address the security challenges posed by ballistic missiles and weapons of mass destruction, the Department has refocused priorities guiding the ballistic missile defense program. Implementing these new priorities was one of the major goals of the Potomac-Up Review.

The highest priority is assigned to the development and deployment of TMD to meet the present and growing threat from ballistic missiles to forward-deployed forces, allies, and friends. This emphasis will provide effective protection against theater ballistic missiles as early as possible consistent with DoD's focus on regional conflicts and experience in Operation Desert Storm. The TMD program is structured to put capability into the field quickly by upgrading existing TMD systems while developing more advanced TMD capability.

Ability to intercept shorter-range ballistic missiles is currently limited to the Patriot Advanced Capability-2 (PAC-2) missile, which was used against ballistic missile attacks during the Gulf War. The immediacy of the tactical ballistic missile threat argues strongly for the rapid deployment of the PAC-3 and the Hawk/TPS-59 radar TMD modifications, along with upgrades

to the Aegis/Standard Missile Block IVA, to provide greater lethality, range, and accuracy, and more capability against longer-range tactical ballistic missiles. While modifications to existing systems can provide point defense for most existing tactical ballistic missile threats, the Theater High Altitude Area Defense (THAAD) system will provide area defense against advanced theater threats. THAAD is an upper-tier system which would defeat longer-range theater missiles and intercept them at greater distances from the defended area thereby reducing the effects of weapons of mass destruction. When operated together, lower- and upper-tier theater missile defense systems will provide a layered defense with an even higher probability of defeating regional ballistic missile strikes. Far-term capabilities to defend against expected higher-performance theater ballistic missiles while assuring required mobility of friendly forces are currently being evaluated in the TMD concepts of sea-based theater-wide TBM defense, the Corps SAM program, and ascent/boost phase intercept.

The second priority is national missile defense for the United States. In recognition of the low probability of a massive ballistic missile attack from the former Soviet Union or China, but to preserve a hedge against a change in that probability or the emergence of a long-range ballistic missile capability by another hostile nation, national missile defense efforts will be focused on achieving and maintaining technical readiness. These efforts will also focus on developing and maintaining the option to deploy an antiballistic missile system that is capable of providing a highly effective defense of the United States against limited attacks of ballistic missiles. Consequently, most elements of a national defense will proceed as research and technology development programs, rather than as acquisition programs. However, Brilliant Eyes, a mid-course missile tracking satellite (or an equally effective alternative) will continue as an acquisition program because it can substantially increase the defended area of a TMD system, such as THAAD. Likewise, ground-based radar (GBR) technology for national defense will advance through the GBR program for THAAD. Interceptor technology efforts will focus on kinetic kill vehicle improvements and testing. The Department's approach is structured so that national missile defenses could be fielded more rapidly should a limited ballistic missile threat to the United States develop at some point in the future.

The third priority is advanced follow-on BMD technologies. Research in this area is aimed at developing technologies offering promise for improved performance in both tactical and strategic defenses, as insurance against possible future threats. Space-based interceptors are in this category as a technology base program only.

BMD Cooperation with Allies and Friends

The United States has long pursued active programmatic and policy dialogue with its European, Asian, and Pacific allies, as well as with Israel on ballistic missile defenses. The policy dialogue was reinvigorated by the refocusing of the Strategic Defense Initiative program in January 1991 and the Global Protection System initiative in response to President Yeltsin's January 1992 challenge to develop a global defense capability. The change in name from SDIO to BMDO, followed shortly by the announcement of the results of an extensive review of the U.S. missile defense program, signaled allies and friends that the United States was preparing to address the current and projected ballistic missile dangers of the post Cold War era.

In developing its BMD program (specifically its TMD systems), the United States will be looking to cooperate with many of its allies and friends who share the problems arising from

the proliferation of ballistic missiles and weapons of mass destruction. In both bilateral and regional fora, the United States has stressed the operational importance of cooperative efforts with alliance partners and friends in the development, production, and follow-on support of weapon systems in general, and TMD systems in particular. In an era of declining budgets, cooperation is especially important. The Department will pursue opportunities to enhance the return on scarce research, development, and acquisition dollars. Cooperation with allies and friends will be conducted in a manner consistent with U.S. international obligations, such as the ABM Treaty and the MTCR guidelines.

To enhance the security of U.S. forces and allies alike, the United States is examining ways to increase TMD cooperation beyond just hardware research, production, or deployment of TMD sensors or interceptors. Other areas for TMD discussions and cooperation with allies could include some of the following areas: exchanges on threats and requirements; studies and test beds; wargames and operational activities; interoperability with other TMD forces; battle management/command, control, and communications (BM/C³); upgrades to improve existing deployed systems and achieve TMD capabilities; and the sharing of sensor information.

Conclusion

The refocusing of U.S. ballistic missile defense programs reflects the Department's understanding of the way the world has changed. The Cold War is over, and the threat it posed to the security of the United States and its friends and allies has been replaced by the threat of theater ballistic missiles and weapons of mass destruction. As a result, the overall BMD program, as highlighted in this section — a robust TMD effort to defeat the most pressing theater ballistic missile threats plus a limited national missile defense technology program — is the best approach to rapidly achieving an effective TMD capability and hedging against long-term threats to U.S. territory.

NUCLEAR POSTURE REVIEW

Introduction

The nuclear posture of the United States grew and developed in response to the Cold War, serving as the foundation of U.S. defense and national security policy for more than 40 years. But with the watershed of events in recent years, it appears that the threats of a massive nuclear attack on the United States, major war in Europe, and global nuclear war have receded to an all-time low.

Despite the new security era, the nuclear threat continues to exist. Tens of thousands of nuclear weapons remain in the republics of the former Soviet Union; custody and control over their use may be less secure now than in the past. New threats to U.S. national security have emerged as additional nations have sought to develop nuclear weapons and other weapons of mass destruction.

Some of these residual and emerging threats may not be amenable to the approaches that worked during the Cold War. Consequently, these new dangers may require new responses. U.S. nuclear posture will be a critical element in responding to these new nuclear threats. The Nuclear Posture Review — the first since the late 1970s — is examining in integrated fashion the entire range of issues associated with U.S. nuclear posture: policy, doctrine, force structure, operations, command and control, safety and security, and infrastructure. It will act as the foundation that shapes U.S. nuclear force posture in the post-Cold War world.

Continuity in the Post-Cold War World

As the Department reviews its nuclear posture to address the new nuclear dangers, it must keep in mind a number of features of the international security environment that have not changed. First among these is the U.S. position of leadership in the international arena. As the only remaining superpower, America must acknowledge its preeminent status and the example it sets when structuring forces and outlining doctrine. Some nations seek evidence and reassurance that America will protect their interests and help them safeguard their security; others seek excuses to pursue or enhance their own nuclear capabilities in response to real or imagined threats. The United States cannot ignore the fact that its military posture and, particularly, its nuclear posture may influence the decisions by others to either acquire or forego their own nuclear weapons and other weapons of mass destruction.

Nuclear weapons are an enduring reality and are not likely to disappear in the foreseeable future. Their numbers may decrease and the nature of the threat faced from them may change, but they simply cannot be eliminated from American defense policy and security strategy. What the nation can do is respond to the demise of the old-style Soviet threat and the emergence of new threats to U.S. security by appropriately altering force posture and outlining a new role for nuclear weapons in the national security strategy.

Finally, deterrence will remain central to U.S. national security strategy. But while classic deterrence will be a necessary and inescapable ingredient in the new security era, it might not be sufficient to meet all the new nuclear threats. During the Cold War era, U.S. nuclear forces were intended to deter any form of military aggression by the nations of the Warsaw Pact against those of NATO. This included not only a direct nuclear attack on the United States, but also nuclear attack, conventional attack, and coercion aimed at U.S. allies in Europe and Asia. The United States maintained the nuclear and conventional forces deemed necessary to convince the Soviet Union that it could not achieve its political or military objectives in a conflict with the United States and its allies. Because NATO faced the numerically superior conventional forces of the Warsaw Pact nations, nuclear weapons served as the counterweight and the ultimate guarantor of U.S. and NATO security. These weapons ensured that the ultimate costs of Soviet aggression — nuclear destruction — would certainly outweigh any expected benefits.

It remains undetermined if the objectives or the methods of Cold War-style nuclear deterrence will be appropriate when facing the new nuclear dangers of the post-Cold War world. Some of the threats may not be susceptible to deterrence, at least to the classic model of deterrence developed to deal with the Soviet Union. Even as deterrence will be an enduring feature of U.S. nuclear security, new circumstances pose the question of new forms of deterrence where non-Soviet threats are concerned, and the likelihood some threats may not be amenable to deterrence at all. Also, it is unrealistic to expect every deterrent relationship that does exist to be as stable as the U.S.-Soviet strategic relationship during 40 years of experience with the Cold War balance. Therefore, the United States must be prepared to review and, where appropriate, adjust its deterrence concepts in the new security era.

Changes in the International Security Environment

THE DISAPPEARANCE OF THE WARSAW PACT CONVENTIONAL THREAT

The most notable changes in the international security environment are the breakup of the Soviet Union and Warsaw Pact, and the subsequent absence of an overwhelming unified conventional threat to the United States or its NATO allies. Although strong conventional forces were deployed to deter Soviet and Warsaw Pact aggression, U.S. nuclear forces played a central role in countering the conventional threat to allies in Europe. The shorter-range battlefield and tactical systems and the medium-range missiles and weapons on aircraft in Europe were designed to repel and defeat an attack in Central Europe by Soviet and Warsaw Pact forces. If the conflict escalated, U.S. strategic nuclear weapons could have struck targets in the Soviet Union. Nuclear forces were viewed as the equalizer of a conventional imbalance — the solution to a military problem for which the United States had no conventional military response.

This nuclear posture was the essence of extended deterrence: If the Soviet Union was convinced that any level of aggression against U.S. allies could escalate into a nuclear conflict that might result in nuclear strikes against the Soviet Union, then the Soviet Union might be deterred from all levels of aggression. This extended deterrent also supported the goal of nuclear nonproliferation in that it gave security assurances to states which otherwise might have felt it necessary to obtain their own nuclear weapons to ensure their own security.

Several nations continue to field imposing conventional forces. Nonetheless, the United States and its allies are likely to have a conventional advantage over any potential conventional opponent in the post-Cold War world. The Bottom-Up Review configures U.S. future forces to preserve this advantage. For the first time in the nuclear age, the United States is not likely to face a conventional military force for which it requires a nuclear equalizer.

THE NEW NUCLEAR DANGERS

Nuclear Weapons Remaining in the States of the Former Soviet Union

Although the threat of nuclear war has dissipated with the demise of the Soviet Union, the presence of tens of thousands of nuclear weapons in Russia, Ukraine, Belarus, and Kazakhstan remains a source of grave concern. The risks posed by these weapons are magnified by the ongoing political uncertainties in the former Soviet republics. The United States continues to support democratic reform in these republics, but must acknowledge that reversals could occur. The future political situations in Russia and Ukraine, in particular, remain highly uncertain. The nuclear weapons that remain in these nations could pose a potent threat in the hands of an adversarial government.

The United States cannot rely solely on arms control to mitigate this threat. It remains committed to the full implementation of START I and START II, but the reductions mandated by these treaties may be delayed by political disputes within and among the START successor states. Although there is optimism that both treaties will enter into force, full implementation will not occur for 7 to 10 years. The security environment could change again in that time. In addition, even after START II is implemented, Russia will retain a sizable nuclear arsenal.

The old Cold War tools of deterrence — strength, balance, and arms control — can still help the United States respond to the threat that these nuclear weapons would pose in the hands of, for instance, a government in Russia that revived an adversarial relationship. This requires the United States to maintain a nuclear posture that clearly demonstrates that no nation would succeed in achieving its military or political objectives if it initiated a conflict with the United States and its allies. Traditional forms of arms control, such as the ratification and implementation of START II, will remain important to help stabilize this balance.

While these Cold War tools of nuclear deterrence remain necessary to hedge against a resurgent Russian threat, they are far from sufficient to protect the United States from all types of threats that could emerge from the residual nuclear arsenals in the states of the former Soviet Union. In particular, these tools might not provide protection against threats that could emerge if the custody of or control over these weapons were to change. Although the United States strongly supports a non-nuclear Ukraine, some officials in Ukraine disagree with President Kravchuk's pledge to make Ukraine nuclear-free in the near future. Uncertainties also exist in Kazakhstan and, to a lesser degree, in Belarus.

There also are concerns about the long-term stability and integrity of the nuclear command and control system in Russia. If political turmoil and ethnic disputes continue and if morale in the Russian military continues to decline, responsible custodianship of nuclear weapons and

associated technologies could eventually be compromised. This could raise the possibility of accidental or unauthorized use of nuclear weapons. Unauthorized launches may or may not be deterrable, but this type of threat would probably require a different model of deterrence than the model used when facing a centralized Soviet command and control authority.

Proliferation of Nuclear Weapons

The political and economic uncertainties in the states of the former Soviet Union are a source of another type of new nuclear threat from outside its borders. This is the threat of the potential for the flow of nuclear weapons and experts to proliferators around the world. While there is reason to believe that no nuclear weapons have been lost or sold from the former Soviet arsenal to other nations or groups, there is great concern that nuclear components, materials or knowledge could leak through porous borders to nations who are seeking to acquire their own nuclear arsenals. Although it is not expected that former Soviet materials or technology would facilitate production of new nuclear nations overnight, this leakage could shorten the amount of time needed before the potential threat from nuclear proliferation became real.

Responding to the Changing Security Environment

NEW RESPONSES FOR THESE NEW NUCLEAR THREATS

The traditional tools of the Cold War cannot safeguard American security from the new dangers emerging from the remains of the old Soviet threat. New tools must be examined; some of them made recently possible by the emerging cooperative relationship with states of the former Soviet Union. The United States must take advantage of the new opportunities for threat reduction through cooperative engagement. In this era, far less time can be spent talking to or past each other at the negotiating table and far more time working together to implement agreements that will eliminate weapons and directly reduce the threats to national security.

The United States spent most of the 1980s negotiating the START Treaty with the Soviet Union. Now, activities are ongoing to implement that treaty even before it is ratified by all of the treaty partners. America has led the way by deactivating all 450 Minuteman II ICBMs and 224 SLBM launchers on 14 ballistic missile submarines. All told, approximately 90 percent of the warheads have been removed from missiles whose launchers will be eliminated under START I; the remaining 10 percent will be removed before the end of 1994. Dismantlement has also begun on many of the B-52 bombers that were the mainstay of the strategic bomber force during the Cold War era.

Concurrently, as the earlier discussion on threat reduction indicates, the United States is encouraging Russia, Ukraine, and Kazakhstan to accelerate the removal of warheads from the ballistic missile systems they would eliminate under START. U.S. experts are working with these nations to develop the means to assist them in the removal of missiles from their launchers and the destruction of those launchers. The reductions mandated by START I and START II are in the best interest of these nations and the United States. By agreeing to eliminate the nuclear weapons deployed on their territories and to abide by their commitments to become nuclear free,

Ukraine, Belarus, and Kazakhstan will free themselves from the costs, security demands, and political burdens associated with nuclear weapons.

Russia and the United States will also benefit from the implementation of START I and START II. Not only will the reductions mandated by these treaties enhance deterrence and stability by eliminating the most threatening weapons in the nations' arsenals — ICBMs with multiple warheads — they will also reduce the burdens that nuclear weapons have placed on economies and create an atmosphere for repairing the environmental damage caused by the Cold War arms race. In addition, under START II, the United States and Russia have agreed to reduce their forces to equal levels of deployed nuclear warheads. This eliminates the significant advantage in the actual numbers of warheads that the United States could have deployed under START I.

Responding to Proliferation of Nuclear and Other Weapons of Mass Destruction

The United States remains firm in its conviction that nuclear proliferation is not acceptable and that the world will be safer with fewer, rather than more, nuclear-armed nations. But recent events have demonstrated that there may be a growing number of nations armed with nuclear or other weapons of mass destruction. Therefore, consideration must be given as to whether and how U.S. nuclear weapons and nuclear posture can play a role in deterring the acquisition or use of nuclear weapons by other nations. These questions are even more urgent when one considers the potential for sub-state factions or terrorists to come into the possession of nuclear weapons.

Nuclear weapons are not the only weapons of mass destruction that the United States might face in the new security era. Many nations either have or are seeking to acquire chemical or biological weapons and the means to deliver these weapons over great distances. During the Persian Gulf War, Iraq demonstrated the threats posed by ballistic missiles and the possible use of chemical weapons. Since the United States has forsworn chemical and biological weapons, the role of U.S. nuclear forces in deterring or responding to such non-nuclear threats must be considered.

ONGOING FORCE STRUCTURE CHANGES

The Nuclear Posture Review will be conducted in an environment of ongoing — and dramatic — dynamic change in the U.S. nuclear posture. For example, over the past few years all U.S. ground-launched and sea-based tactical nuclear weapons have been withdrawn from bases overseas to storage sites in the United States; many of these weapons will be dismantled. The United States continues to maintain air-delivered nuclear weapons in Europe — as an important link between its conventional and strategic nuclear forces and as evidence of the political and military commitment to the NATO alliance — but NATO has reduced its nuclear stockpile by more than 80 percent in the last two years.

The United States is also in the midst of a build-down of historic proportions with its strategic nuclear forces. This has begun by removing the warheads from all 450 Minuteman II missiles and eliminating some of the missiles' launchers. Fourteen ballistic missile submarines with 224 launchers for SLBMs have been withdrawn from service. Concurrently, the bomber force has been removed from its traditional Cold War alert status. The B-1B bomber will be

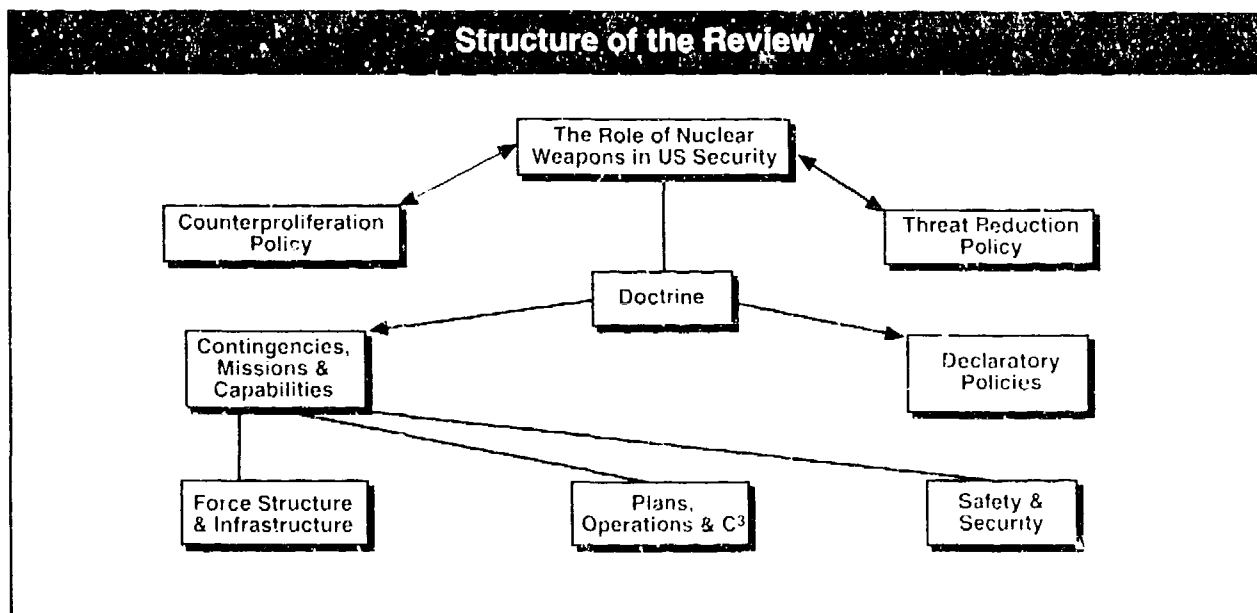
reoriented to conventional missions to provide a better response to emerging threats and regional contingencies that might arise in the future. At the same time, and for the first time in decades, no new ICBMs, SLBMs, or heavy bombers are under development and no new nuclear warheads are in production.

The United States currently deploys many thousand fewer nuclear warheads than just a few years ago and has fewer warheads on alert than just two years ago. These numbers will continue to decline when START I and START II are implemented, reducing U.S. forces (and those in the states of the former Soviet Union) from more than 10,000 to 3,500 on each side.

These changes demonstrate clearly that the process of change from the nuclear posture of the Cold War era is already underway. But these force structure changes are not the complete answer. The Presidential guidance that governs nuclear planning is more than 10 years old. The United States has not reviewed its basic nuclear policy in more than 15 years and has never undertaken a comprehensive review of all facets of its nuclear posture. Now is clearly the time for a comprehensive, basic, wide-ranging, integrated review of the entire U.S. nuclear posture.

THE NUCLEAR POSTURE REVIEW

The Nuclear Posture Review is a comprehensive effort that will provide an integrated, consistent nuclear posture that safeguards national security in an era of novel and continually changing nuclear dangers. It is a collaborative effort among the OSD, the Joint Staff, the Services, and the CINCs. Representatives from each of these organizations sit on six Working Groups, addressing such topics as the role of nuclear weapons in U.S. defense and national security; the number and types of weapons needed to implement that strategy; their operational concepts and command and control; the opportunities for additional safety and security improvements for nuclear forces; and the relationship between nuclear force posture and other U.S. policy goals, such as efforts to reduce the threat from the nuclear weapons remaining in the former Soviet Union and efforts to counter nuclear proliferation around the world.



At the same time, these six working groups cannot conduct their deliberations in isolation. If, together they are to produce a single, integrated nuclear posture for the United States, the recommendations emerging from each group must advise and reflect the work of other groups. The diagram highlights this principle.

As the box at the top of the diagram indicates, as a first step, several key questions must be answered about the role nuclear weapons will play in safeguarding U.S. security in the post-Cold War world. A determination must be made as to which adversaries and what threats to national security — immediate and potential — need to be taken into account in planning future U.S. nuclear capabilities. The answers to these questions will form the foundation of U.S. doctrine in the new security era. They will also help determine U.S. declaratory policy — the statements made to explain why America has nuclear weapons and what it would do with them.

Once the decision has been made as to what basic doctrine will be, a determination must be made as to how to accomplish national security objectives. To do this, those missions and contingencies where nuclear forces have a bearing must be identified. The answers to these questions will help define the specific force structure, infrastructure, plans, operations, and safety and security measures necessary to implement doctrine and accomplish missions prudent for nuclear forces.

Taken together, answers in these areas will provide the building blocks of U.S. nuclear posture. But work does not stop there. If nuclear force posture is to safeguard the security of the United States, it must reinforce efforts to reign in and eliminate threats from weapons of mass destruction. As a result, the Nuclear Posture Review is also studying the relationship between U.S. nuclear posture and its threat reduction efforts with the states of the former Soviet Union and between U.S. nuclear posture and its counterproliferation efforts. The recommendations that emerge in these areas will help further refine and structure recommendations on doctrine, strategy, and deterrence objectives. Consequently, the nuclear posture that emerges from this process will be more than just a response to the residue of the Cold War nuclear threat. It will also be shaped by considerations of what is needed to respond to the new nuclear dangers in the post-Cold War world.

Conclusion

During the Cold War, the United States developed deterrence theories, arms control theories, and rules that helped it understand and manage the deterrent relationship with the Soviet Union. Those old rules may not apply to the new nuclear dangers. Thus, the Nuclear Posture Review has taken on the task of rethinking nuclear posture and rewriting the rules for the post-Cold War world.

DEMOCRACY AND PEACEKEEPING

Introduction

The Office of the Secretary of Defense has responded to the dynamic environment of the post-Cold War era by recognizing that the Defense Department may be increasingly called upon to make nontraditional use of military personnel and capabilities. Such tasks include international peacekeeping and peace enforcement, the promotion of democracy and human rights, and the implementation of the U.S. counterdrug program. One element of the response is the creation of a new position, the Office of the Assistant Secretary of Defense for Democracy and Peacekeeping (ASD(D&P)) to act as principal staff assistant and advisor to the Under Secretary of Defense for Policy on these issues.

Peacekeeping and Peace Enforcement in the Post-Cold War Era

PEACE OPERATIONS STRATEGY

The fundamental foreign policy goal of the United States is a stable world order in which democratic values and free trade can flourish. With the end of the Cold War, the threat to this vision no longer lies in a Soviet attack across the plains of Europe. However, the prospect of a stable, free, and economically vibrant world today is challenged by a myriad of ethnic, tribal, and religious conflicts that increasingly endanger regional security and democratic freedoms.

These conflicts, while not posing direct threats to vital U.S. interests, may nonetheless jeopardize important American interests in regional security and in democracy and human rights. The cumulative impact of unchecked conflict and its ensuing human and economic costs will render more elusive the Administration's goal of enlarging the sphere of democratic, free-market states.

The end of the Cold War has increased demands for responses to such instability through multinational peace operations. When its vital interests are not at issue, the United States would prefer that the international community join together to address common threats, thereby sharing both the costs and risks of involvement, and providing greater legitimacy to the action undertaken.

The United Nations, as well as some regional organizations, has the capacity to organize nations to act to prevent, contain, or resolve conflicts through what is broadly termed peace operations — the scope of which ranges from traditional peacekeeping to military interventions involving the potential for combat.

Using Force in the Post-Cold War, Post-Soviet Era

Given the experience of crises in Bosnia, Somalia, and Haiti, there is considerable debate over whether, when, or how the United States, in the framework of the United Nations and other

international organizations, should undertake peacekeeping and peace enforcement missions. In this uncertain post-Cold War security environment, there is little agreement on how to deal with humanitarian tragedies spawned by ethnic conflict, civil war, and/or suppression of democracy and human rights. Nor is there a consensus on the stake that Americans have in those conflicts and the price they should bear in resolving them.

During the Cold War, ethnic and religious conflict or humanitarian disaster fell below the threshold for use of American forces in support of U.S. vital interests. At least in part, that reflected the fact that most Americans saw U.S. vital interests at risk every day and in many places. The basic question has always been: What stakes or interests are important enough to justify risking the lives of American men and women in combat?

Deciding whether and when to use force, either unilaterally or in multinational peace operations, to deal with destabilizing conflicts will depend on the balance between what has to be done, the potential costs and risk to U.S. military forces, and the stakes or interests involved. America needs a framework for deciding which military actions, including peace operations, it can and should do. U.S. experiences in Bosnia, Somalia, and Haiti have been troubling and difficult, but they have also been instructive. The United States has learned the important differences between traditional peacekeeping missions and effective peace enforcement. Understanding how to conduct peace operations is a necessary step in building an effective response to the new era challenges.

Addressing Threshold Questions

President Clinton, in his address to the United Nations on September 27, 1993, articulated clearly the questions the United Nations must address before undertaking new peacekeeping or peace enforcement missions. These include:

- Is there a real threat to international peace and security?
Does the proposed mission have a clear objective?
Can an end point be identified for those who will be asked to participate?
- Are the forces, financing, and mandate that will be needed to accomplish the mission available?

The United States made it clear that its continued support for U.N. peace operations is based on the United Nations' willingness to address these tough threshold questions. As President Clinton told the United Nations, "If the American people are to say yes to U.N. peacekeeping, the United Nations must know when to say no."

Correspondingly, the U.S. government must address additional questions when considering its own participation in a peace operation, such as:

- Is the use of force necessary at this point? Have other means, including diplomacy, been fully considered?

- Is the commitment of U.S. forces necessary for the success of the proposed peace operation or to persuade others to participate?
- Are the stakes or interests involved worth the risks to American military personnel?
- Will there be domestic political and congressional support for U.S. participation?
- Has an end point for U.S. participation been identified?
- Are the command and control arrangements for American forces acceptable?
- In instances involving the significant use of American forces, is the United States committing sufficient forces to achieve decisively its political and military objectives?

More importantly, it is absolutely critical that the United States maintain the capability, the will, and the freedom to act unilaterally in the defense of its important national interests. As National Security Advisor Anthony Lake stated on September 21, 1993, "there is one overriding factor for determining whether the United States should act multilaterally, and that is America's interests. The rule is very simple: we should act multilaterally where doing so advances our interests, and we should shun multilateral action where it does not serve our interests."

These threshold questions identify, both for the United Nations and the United States, several issues that must be addressed when considering whether, when, and how to use force. As with all good rules of thumb, these guidelines reflect U.S. experience and, as with all works in progress, will evolve over time. In addition, there are other important issues to consider when the U.S. evaluates possible participation in a peace operation.

U.S. Military Participation in U.N. Peace Operations

It has long been recognized that deploying American servicemen and women into combat in support of U.S. interests is one of the most critical decisions the President can make. However, sending American troops to participate in multilateral peace operations may be an equally critical decision, particularly in the case of a peace enforcement operation in which the active use of force may become necessary.

The Department of Defense participates in the interagency process to determine the appropriate level of U.S. involvement in support of peace operations. DoD seeks to guarantee that if American forces are deployed in a multilateral operation, they are properly trained, equipped, and supported. DoD also seeks to ensure that the mission is clearly defined, that the means are available to ensure success, and that the rules of engagement are appropriate. American soldiers will not be deployed into a hostile situation under the operational control of a foreign commander, unless the United States is satisfied with the command and control arrangement, the commander, the mission, and the support provided to accomplish that particular operation.

The issue of command and control will always be a key factor in deciding whether to deploy U.S. forces as part of a U.N. peace operation. As a practical matter, if significant combat operations are contemplated, and if American involvement is planned, it is unlikely that the United States would agree to place its forces under the operational control of a U.N. commander. In these situations, the United States would prefer to rely either on its own resources, on those of a capable regional organization such as NATO, or on an appropriate coalition such as that assembled for Operation Desert Storm. It is this very rationale that prompted the decision that both the Quick Reaction Force (QRF) and the Rangers deployed in support of UNOSOM II would remain under direct U.S. command and control at all times. This is also why the United States has publicly stated that NATO — not the United Nations — should conduct any large-scale operation to implement a peace settlement in Bosnia.

When, on a case-by-case basis, the United States decides to place American personnel or forces temporarily under the operational control of the United Nations, all fundamental elements of U.S. command will remain intact. While under operational control of the United Nations, U.S. commanders will be required to follow the orders given by higher U.N. commanders consistent with the mandate agreed to by the United Nations and the United States. This type of relationship is nothing new for American commanders — many of whom were placed under the operational control of foreign commanders during World War I, World War II, Korea, and most recently the Persian Gulf War. It is also the relationship that exists for U.S. commanders when they are participating in a NATO operation. Even in such circumstances, the chain of command from the President to the lowest U.S. commander in the field remains inviolate. Moreover, if a U.S. commander receives an order that he considers to be outside the agreed mandate, he has the responsibility to refer the issue to a higher U.S. authority if he is unable to resolve the issue with the U.N. commander.

Finally, it is important to stress that the United States will always reserve the right to terminate participation of U.S. forces at any time and take whatever action deemed necessary to protect U.S. servicemembers if they are perceived to be in danger.

PEACE OPERATIONS OVERVIEW

At the end of 1993, the U.S. military was participating in 5 of the 17 ongoing U.N. peace operations: Iraq-Kuwait (UNIKOM), Israel-Egypt-Jordan-Syria (UNTSO), Western Sahara (MINURSO), the former Yugoslavia (UNPROFOR), and Somalia (UNOSOM II). Table II.2 shows the level of U.S. military participation in U.N. peace operations. U.S. forces provide nearly 6 percent of over 70,000 U.N. personnel deployed worldwide. Finally, the United States currently provides nine military officers and non-commissioned officers to assist the U.N. headquarters in New York to serve on the staff of the newly reorganized Department of Peace Operations. However, what is not shown on this table is the sizable contribution of the U.S. military in support of U.N. peace operations and U.N. Security Council Resolutions. As Table II.3 highlights, over 80,000 U.S. military personnel are indirectly involved in support of the United Nations — principally in Korea, Iraq, the former Yugoslavia, Somalia, and Haiti.

Table II-2

U.N. Peace Operations (1993)

Operation	Year U.N. Operation Started	Total U.N. Personnel	Total U.S. Personnel
UN DPO New York	1991	150	9
IS-EG-JOR-SYR (UNTSO)	1948	218	16
India and Pakistan (UNMOGIP)	1949	38	0
Cyprus (UNFICYP)	1964	1,249	0
IS-SYR — Golan Heights (UNDOF)	1974	1,239	0
Lebanon (UNIFIL)	1978	5,287	0
Iraq-Kuwait (UNIKOM)	1991	523	15
Angola (UNAVEM II)	1991	81	0
El Salvador (ONUSAL)	1991	310	0
Western Sahara (MINURSO)	1991	348	29
Cambodia (UNTAC)	1992	0	0
Former Yugoslavia (UNPROFOR)	1992	26,310	630
Somalia (UNOSOM II)	1993	29,209	3,252
Mozambique (ONUMOZ)	1992	6,576	0
Rwanda/Uganda (UNOMUR)	1993	81	0
Rwanda (UNAMIR)	1993	1,260	0
Liberia (UNOMIL)	1993	160	0
Haiti (UNMIH)	1993	0	0
Georgia (UNOMIG)	1993	55	0
TOTAL		73,100	3,951

U.N. PEACEKEEPING OPERATIONS

Peacekeeping operations undertaken with the consent of all major belligerents are designed to monitor and facilitate the implementation of an existing truce agreement in support of diplomatic efforts to reach a political settlement to a dispute. The U.S. military usually participates in these U.N. operations by providing officers as observers and monitors. In FY 1993, the United States deployed a total of 60 officers in this traditional peacekeeping role.

Table II-3 U.S. Forces Acting in Support of U.N. Peace Operations			
Operation	Year Operation Started	Mission	Number of U.S. Personnel Participating
Haiti (Support Democracy; (UNSCR ² 867))	1993	Enforce embargo, repatriate refugees	3,145 ¹
Somalia (UNSCR 814)	1993	Provide support to UNOSOM II	9,000
former Yugoslavia -- Naval Forces Supporting UNPROFOR (UNSCR 770, 781, 787, 816, 836)	1992	Support NATO enforcement of U.N. sanction	4,845
former Yugoslavia Provide Protection (UNSCR 770, 787))	1992	Provide humanitarian assistance	1,000
former Yugoslavia -- Naval Deter Flight (UNSCR 781)	1992	Support U.N. No-Fly Zone over Bosnia Herzegovina	1,800
Iraq Southern Watch (UNSCR 660, 661, 687, 688)	1992	Monitor repression of southern Iraq population	14,000 ¹
Iraq Provide Comfort (UNSCR 637, 688)	1991	Provide safe havens for population of northern Iraq	1,351
Iraq Maritime Intercept Force (UNSCR 660, 661, 687, 688)	1990	Enforce U.N. sanctions against Iraq in the Gulf of Arabia and Red Sea	8,000 ¹
Korea	1950	Contribute to security of Korean Peninsula	37,000
TOTAL			80,141
¹ All numbers are approximate			
² U.N. Security Council Resolution			

During 1993, the United States also responded to a critical need in the former Yugoslavia by deploying a mobile hospital to Zagreb and, most recently, deploying an infantry company to serve as observers in Macedonia.

NON-U.N. PEACEKEEPING OPERATIONS

In addition to participating in U.N. peacekeeping operations, there are times when the United States will be requested to participate in a multilateral peacekeeping operation that is sponsored by either a regional organization or an ad hoc coalition. As a result of the Camp David Accords concluded in 1979, the United States has maintained approximately 1,000 soldiers and observers from all the Services deployed as a contingent of the Multilateral Force and Observer Mission (MFO) in the Sinai to help maintain a stable environment along the borders of Egypt and Israel (Table II-4). This operation has provided significant support to the cause of achieving peace in the Middle East -- a cause that is very clearly in the vital interests of the United States.

Table II-4 Costs of Current Non-U.N. Peace Operations			
Operation	Year Operation Started	Mission	U.S. Personnel Participating
Sinai (MFO)	1979	Provide a buffer between Egypt and Israel in compliance with the Camp David Accords	1,000
NOTE: This is not the only non-U.N. peacekeeping operation; however, it is the only one in which the United States contributes forces			

PEACE ENFORCEMENT OPERATIONS

Peace enforcement operations are actions involving the use of force or the threat of the use of force, authorized by the United Nations Security Council under Chapter VII of the U.N. charter, to preserve, maintain, or restore international peace and security or address breaches of the peace or acts of aggression. When the President determines that it is in the interests of the United States to assign forces as part of a multinational peace enforcement effort, operational control of select units may be given to the multinational headquarters. To date, American forces have only been assigned to two peace enforcement missions -- UNOSOM II (Somalia) and UNPROF-OK (former Yugoslavia).

As can be seen by Table II-2, the largest deployment of U.S. forces as a component of a U.N. operation is in Somalia. U.S. involvement in the Somalia peace enforcement operation started

in December 1992 when former President Bush authorized the deployment of approximately 25,000 U.S. servicemembers to help avert a humanitarian disaster that threatened the lives of nearly two million Somalis. This operation, undertaken pursuant to a U.N. Security Council Resolution, enabled necessary food, water, and medicine to be delivered to those in the greatest need.

In May 1993, the United States turned this mission over to the United Nations Operation in Somalia (UNOSOM II) and withdrew 20,000 troops. The continuing U.S. mission is to assist in maintaining a secure environment to enable the free flow of humanitarian relief by providing approximately 2,950 U.S. military logistics services personnel to U.N. forces and an U.S. combat unit consisting of approximately 5,000 personnel to act as a force protection supplement to U.N. combat units in emergencies. All U.S. combat forces remain under U.S. command; however, U.S. logistics units are under U.N. operational control.

The United States will complete the transition of its military logistics support to United Nations civilian contractors and other nations' logistics units no later than March 31, 1994. With the withdrawal of logistical support, the United States will also withdraw all combat forces. By the beginning of April 1994, the United States may deploy a limited number of U.S. military personnel sufficient only to protect American diplomatic facilities and American citizens, and noncombatant personnel to advise the United Nations Commander in Somalia.

While there have been serious problems confronting UNOSOM in Mogadishu, its success throughout Somalia has been impressive and substantial.

There have also been significant successes in health and education. During 1993, over 750,000 Somali children have been vaccinated — greatly reducing the mortality rate for these innocent victims of the bloody civil war. In addition, whereas a year ago not a single school was operating in Somalia, today there are nearly 250. The need for humanitarian relief has decreased significantly since U.S. forces first entered Somalia.

Similarly, the U.S. military has been actively involved in supporting the efforts of the United Nations to establish a positive climate for negotiation and providing humanitarian relief in the former Yugoslavia since its dissolution in 1990. The U.S. military has actively supported U.N. Security Council resolutions establishing an arms embargo and the imposition of U.N. sanctions on Serbia Montenegro. The U.S. Navy has committed three ships to Operation Sharp Guard in the Adriatic Sea where it has challenged over 11,000 merchant vessels and halted and boarded or diverted to a port for inspection over 1,000 merchant ships. Finally, the U.S. Air Force and Navy have flown over 5,200 sorties to enforce the no-fly zone over Bosnia-Herzegovina to ensure that combatant aircraft are prevented from carrying out missions.

As in Somalia, the U.S. military also played a pivotal role in providing desperately needed humanitarian assistance to noncombatants within the theater. In the largest airlift of food since the Berlin Airlift ended in September 1949, the United States, in partnership with its NATO allies, has orchestrated the delivery of over 65 short tons of food a day to the beleaguered city of Sarajevo. Without the resolve and military capability of the United States, thousands of innocent civilians would have starved.

Humanitarian Assistance and Human Rights

During the past fiscal year, Congress has recognized an expanded DoD role in humanitarian assistance by increasing humanitarian assistance funds from \$15 million to \$28 million, and providing \$50 million for global disaster relief. In FY 1993, 103 countries benefited from DoD humanitarian assistance. The Department also has been able to evacuate war wounded and injured individuals to the United States and Europe for privately arranged medical care.

Separate supplemental appropriations, transfers, and reprogrammings have funded special DoD humanitarian assistance activities for the Kurdish people in northern Iraq (\$23 million in FY 1993) and for areas of the former Soviet Union (\$100 million in FY 1992 and \$42 million in FY 1993). DoD has also provided foreign disaster relief assistance through Operation Provide Relief in Somalia and Operation Provide Promise in the former Yugoslavia. As of October 8, 1993, the Bosnia airlift under Operation Provide Promise surpassed the 15-month Berlin Airlift in duration.

A number of new policy initiatives are under way to advance the ability of DoD to meet humanitarian needs and contribute to overall U.S. humanitarian policy, including the following:

- The development of a humanitarian daily ration (HDR) modelled after the meals-ready-to-eat (MRE), but nutritionally appropriate for humanitarian emergencies, culturally sensitive, and 70 percent less costly per day than the MRE;
- Active planning and coordination of DoD activities to facilitate international demining efforts which facilitate the return of civilians after conflicts in which land mines have been extensively used;
- Serious, new efforts to address international legal questions related to treaties governing the conduct of war in order to strengthen the protection of civilian populations in conflict situations;
- The development of policy and procedures for coordinating the humanitarian components of peacekeeping actions; and
- Promoting the principles and practices that govern U.S. military and National Guard support and assistance to civil authorities as a model for other governments in planning for emergencies and disasters, with particular focus on the contingencies of nuclear reactor accidents.

Promotion of Democracy and Counterdrug Efforts by DoD

The spread of democracy around the world enhances U.S. security, improves global stability, and creates prosperity for all peoples. Promoting democracy benefits U.S. national security and a non-democratic world is a safer world. Recognizing this, the President has made promotion of democracy and individual human rights a priority for his Administration. The

Department has a role to play in support of that vital mission. The Department of Defense supports the President by working to improve the relationship between emerging democracies and their militaries. One hallmark of successful democracies is military acceptance of civilian control. A civilian-managed military is a key component of successful democratic reform. In a democracy, the military cannot be an independent actor; it must take directions from the freely-elected civilian government and be accountable to society for the way it carries out those directions.

In the past, promotion of democracy has been an indirect benefit rather than an explicit goal of many DoD programs. However, the DoD budget request for FY 1995 includes \$46.3 million for support of national military-to-military contact programs that will enhance U.S. efforts to promote democracy, to foster greater understanding and respect of democratic values and processes, and to institutionalize respect for individual human rights.

DoD Counterdrug Efforts

The Department's support to counterdrug programs plays a particularly important role in promoting and protecting democracy. Narcotics trafficking continues to threaten democratic institutions and regional stability in the Western Hemisphere and elsewhere. Consequently, routine political exchanges and the safe conduct of trade and commerce are negatively affected. The United States joins with the primary producing, transit, and consuming nations to disrupt and ultimately destroy the illegal trade through cooperative efforts to disrupt drug trafficking; effectively enforce drug laws; educate the U.S. citizenry about drug abuse and treatment; and establish programs to reduce demand for illegal drugs.

In 1993, DoD pursued a wide range of successful counterdrug initiatives and activities in support of the Department of State; federal, state, and local law enforcement agencies; and cooperating foreign countries. Despite the best efforts of the U.S. counterdrug departments and agencies, the availability of illegal drugs, and the crime associated with it, has not been substantially reduced.

Because of this, the Administration reevaluated counterdrug priorities and objectives at the domestic and international levels. Guidance on future counterdrug policy was provided by a Presidential Decision Directive on international counterdrug strategy, which directed a change in emphasis from a policy focused primarily on interdiction in the transit zone (the Caribbean and Central America), to a three-part strategy of supporting counterdrug institutions in host countries, destroying narcotics organizations, and engaging in a gradual shift in emphasis in interdiction activities from the transit zone to the source countries (Colombia, Peru, and Bolivia).

An accurate understanding of the degree to which the Department has performed its counterdrug missions can best be obtained from an examination of each mission.

ATTACKING THE FLOW OF DRUGS AT THE SOURCE

The Andean Region continues to be the source of cocaine consumed in the United States. At the request of U.S. ambassadors, and in coordination with U.S. law enforcement agencies, DoD and

the Southern Command supported counterdrug efforts focusing on activities in Peru, Bolivia, and Colombia. The focus of this effort served to have host-nation law enforcement and military forces work together to foster democratic institutions and to fight the narcotrafficker at the strategic, operational, and tactical levels.

This support included deployments for training, human rights training of host-nation police and military, and joint training exercises, as well as equipment, operational planning support, and detection and monitoring of the transport of cocaine. There are clear signs that the programs are working — police and military capabilities and commitment have been enhanced, the cartels are under increasing police and legal pressures, and drug and asset seizures by national police units increased to more than 100 metric tons in FY 1993.

ATTACKING THE FLOW OF DRUGS IN TRANSIT

In the transit zone and border areas, DoD focused its efforts on the flow of drugs through land, air, and sea routes into the United States. Transit zone detection and monitoring were performed by Active and Reserve component military forces in direct support of U.S. Customs, U.S. Coast Guard, the Border Patrol, and host-nation law enforcement agencies.

The U.S. Atlantic Command has streamlined and enhanced its effectiveness and efficiency of these transit zone operations through innovative technology applications, a redistribution of forces, and a focus on intelligence-cued operations.

ATTACKING THE DISTRIBUTION AND USE OF ILLEGAL DRUGS IN THE UNITED STATES

Active duty and Reserve components played a critical role in DoD's counterdrug effort, with the National Guard taking a lead role. National Guard support, consisting of 16 missions included in the Governors' Counterdrug Support Plans, emphasize support to federal, state, and local law enforcement agencies in the High Intensity Drug Trafficking Areas (HIDTAs), the Southwest border, and critical ports of entry.

Two effective tools used by DoD in the national fight against illegal drugs are Sections 1208 and 1004 of the 1991 National Defense Authorization Act, as amended, which allowed for the provision of more than \$120 million in support to law enforcement. This support included personnel, equipment, training, intelligence, analysis, reconnaissance, engineering projects, foreign language translation, and transportation.

DEMAND REDUCTION

The Department has long been a leader in efforts to reduce the abuse of drugs in the workplace and in the community. Demand reduction efforts within the Department focused on drug testing, education and training, treatment, and community awareness/outreach programs, and were extremely successful during the past year. Efforts were undertaken to increase the Department's activities in communities throughout the country to support the President's pledge to help the nation's youth, and particularly inner-city youth, cope with the problems of drug abuse.

The DoD drug testing policy includes testing of all military personnel, those civilians who are in special testing designated positions, and a requirement that defense contractors maintain a drug free work force.

Last year Congress directed the Department to establish a pilot outreach program in communities throughout the nation with the purpose of reducing the demand for illegal drugs. Twelve programs, developed with the support of local communities, use military personnel as role models and offer individually tailored activities of drug education, mentoring, self-esteem building, and social activities. The program involved military members, both active duty and reserve, and focused on inner-city youth in particular. The outreach program was also designed to take advantage of the enormous dispersal of military facilities and personnel throughout the United States. A report on the pilot program is due to Congress in October 1994.

BUILDING A DEFENSE PARTNERSHIP WITH RUSSIA, UKRAINE, AND THE NEW INDEPENDENT STATES OF THE FORMER SOVIET UNION

Introduction

After four decades in which confrontation between the United States and the Soviet Union was the defining feature of international politics, the United States and Russia now have an opportunity to redefine their strategic relationship. The United States and its allies, together with Russia, Ukraine, and the other states that emerged from the former Soviet Union, now seek a partnership — one that will replace the hostility that until recently separated the world into two heavily armed camps. This partnership will stress areas of common interests with the same vigor with which they previously emphasized their differences.

As a cornerstone of this new relationship, President Clinton reaffirmed the goal of a strategic partnership between Russia and America at the Vancouver Summit in April 1993. Correspondingly, the United States also seeks to build cooperative relations with the other successor states to the former Soviet Union.

With this goal in mind, the Secretary of Defense has made building a successful defense and military partnership with Russia, Ukraine, and the other new independent states one of the highest priorities of the Department of Defense.

It is clear, however, that this transition from the hostility of the Cold War will be neither instantaneous nor easy. It will be a defining challenge for the decade ahead. Views and prejudices, habits and procedures developed over the past decades pose major obstacles to these new relationships. A steady, continued engagement is called for in which each party seeks to clarify to the other its fundamental national security interests — one that is not disheartened by inevitable setbacks.

The Strategic Partnership

The Department's role in the U.S. program to build a partnership with Russia is to implement the President's mandate to intensify cooperation with the Russian military. In doing so, the United States hopes to encourage support for reform, create equity in cooperation with the United States, develop a military responsible to democratically elected officials, show that a market economy can provide for adequate military forces, promote a reduction in nuclear and conventional forces, encourage cooperation in regional crises, achieve collaboration in nonproliferation, and forestall any reappearance of Russian aggression. Meeting these objectives would help avoid or respond to all four of the key threats to U.S. security.

U.S.-Russia Defense Cooperation

Pursuing cooperative defense efforts with the Russian military is important for two reasons. First, as Russian President Yeltsin's recent confrontation with the conservative Parliament

demonstrated, the military is a key player in Russia's ongoing efforts to consolidate its democratic transformation. Second, to the extent that hair-trigger postures during the Cold War stemmed from the two sides' inability to read each other's cues, it would be helpful to understand such signals and the assumptions and thinking which underlie them.

The Defense Department has worked to build ties to the Russian military leadership and to engage it on key questions of bilateral relations and international security. The objective is to forge a strategic partnership and help bring about a safer military relationship between the United States and Russia than that inherited from the Cold War. Since January 1993, DoD has launched several initiatives designed to achieve those ends. They include:

- Secretary Aspin met twice in 1993 with his Russian counterpart, Defense Minister Pavel Grachev, in Garmisch, Germany, (June) and in Washington (September). These meetings have helped cement a personal and public commitment at the highest levels to pursue closer relations and have established a precedent for the U.S. Secretary and Russian Defense Minister to meet regularly to discuss issues of common concern.
- A Memorandum of Understanding on Defense and Military Relations was signed during Defense Minister Grachev's visit to Washington. This agreement forms the basis for a solid partnership and an expansion of mutually beneficial relations across the defense spectrum.
- Russian and American specialists have inaugurated a series of discussions on key security issues aimed at solidifying cooperation and reducing friction on contentious issues. The work of these experts has been essential in promoting transparency in each other's military structures and operations.
- Senior Russian and American military leaders have met to discuss a broad range of strategic and doctrinal issues. The Joint Staff Talks provide an opportunity for the leadership of the U.S. Joint Staff and Russian General Staff to plan and coordinate military-to-military contacts, to share information, to promote transparency in military affairs, and to build personal and professional relationships. In this way, Joint Staff Talks contribute substantially to the building of a strategic partnership.
- During the recent Aspin-Grachev ministerial, agreement was reached to implement the Secretary of Defense's initiative to install a dedicated telephone communications system between the Minister of Defense (MOD) and himself. The inaugural call between both parties was held on January 5, 1994.
- The Assistant Secretary for Strategy, Requirements, and Resources will continue the dialogue which Secretary Aspin began with the Russian MOD in Garmisch and Washington.
- The two sides have developed a broad program of contacts for 1994 which include defense and military contacts, peacekeeping, housing, and officer transition training.

The Defense Department is also trying to expand the relationship beyond dialogue to actual cooperative ventures. Efforts to date are concentrated in two areas: combined peacekeeping training with the Russians; and seeking ways to ease the pain of Russian economic transition from a war footing to peacetime activities.

- The first step toward combined peacekeeping exercises took place in October 1993 with the visit of the Commander of the U.S. Army Third Infantry Division to the 27th Motorized Rifle Division (MRD) in Russia. OSD will be monitoring the implementation of this plan and assisting where required.
- A Joint Search and Rescue Exercise involving the Russian Air Force and the U.S. Air Force with participation from the Alaska Air National Guard was conducted in Siberia in April 1993.
- The Deputy Secretary of Defense followed up discussions on defense diversification, military housing, and officer retraining with a visit to Moscow in fall 1993. The Department is also looking into ways to help the Russians in such areas as the transition of military officers to civilian life, housing, defense conversion, and addressing environmental concerns. Congress has authorized the use of Nunn-Lugar funds for this effort.

The U.S. effort is not confined to Russia. The Department of Defense has established relations and is developing programs with the leadership of the other three states where nuclear weapons are located — Ukraine, Kazakhstan, and Belarus — and plans to broaden those contacts to include all 12 successor states, plus the Baltic nations. A country-by-country summary of DoD initiatives follows.

U.S.-Ukraine Defense Cooperation

The United States believes in the importance of Ukraine independence and seeks to build cooperative ties in defense as in other realms. Its development into a stable, prosperous Central European country would bode well for general European security as well as for its own future. In building relations with Ukraine, it is important neither to underestimate the potential danger posed by the 1,600 strategic nuclear warheads left on Ukrainian territory after the collapse of the Soviet Union, nor to treat that as the sole issue on the U.S.-Ukrainian agenda. U.S. policy and DoD initiatives proceed on two tracks: developing and broadening dialogue with Ukraine on a full range of defense and security issues and encouraging it to honor the commitments made under the Lisbon Protocol and associated instruments of May 1992. A historic development took place during January 1994 in Moscow as President Clinton joined Presidents Yeltsin and Kravchuk in signing a trilateral joint statement outlining the steps the three governments would take to ensure the removal of all nuclear weapons from Ukraine. This was the culmination of months of joint work, which began with a proposal to Ukraine and Russia by Secretary Aspin, on a formula to implement Ukraine's declared intention to become a non-nuclear weapon state.

The Defense Department has taken several significant steps in this direction:

- Secretary Aspin traveled to Kiev in June 1993 to meet with former Ukrainian Defense Minister Konstantin Morozov, becoming the first

Secretary of Defense to visit independent Ukraine. Morozov then paid a return visit to Washington in July.

- In summer 1993, the Pentagon hosted a group of nine key members of the Ukrainian Rada, or parliament, all of whom sit on committees concerned with national security issues. They met with senior Pentagon civilian and Joint Staff officers and discussed various approaches to assuring Ukraine's security.
- A Defense-led team from the U.S. government traveled to Ukraine in October 1993 to discuss specific military and defense contact programs between the United States and Ukraine. Seventeen bilateral programs were agreed to at that time. This group is a regular forum for discussion on defense matters and meetings biannually.
- A California Air National Guard-led team of medics, dentists, and optometrists deployed to Ukraine in September 1993 for cooperative medical training with Ukrainian counterparts. The first U.S. military unit to deploy to Ukraine since World War II, U.S. personnel treated various patient populations, including children who were victims of the Chernobyl nuclear disaster. California has since proposed a National Guard State Partnership with Ukraine.

U.S.-Kazakhstan Defense Cooperation

Kazakhstan, as one of the four successor states to the Soviet Union on whose territory nuclear weapons are located, is of considerable importance to U.S. national security and global arms control negotiators. Kazakhstan is important, though, not just because of the risks which SS-18s now there can pose, but because of the opportunities it may present. A secure, prosperous Kazakhstan is likely to serve as a force for stability in Central Asia; and because no single ethnic group comprises a majority, also as a model of a successful multiethnic state. Thus, U.S. security interests would be well served by facilitating Kazakhstan's evolution toward a market economy and democracy. Kazakhstan's recent decision to ratify the NPT as a non-nuclear state was a major step in that direction.

The United States and Kazakhstan have taken steps in the past year to lay the groundwork for a cooperative defense relationship. The military-to-military program shows great potential. Already, Kazakhstan has received funds under the International Military Education and Training (IMET) program that were used to sponsor an orientation tour to the United States for several senior Kazakhstani military officers. DoD held a Bilateral Working Group planning session in Almaty in October, with a full-scale meeting to take place in early 1994.

At the full-scale meeting, Kazakhstani officials are to identify priority programs and make specific proposals for cooperative efforts. Examples of these programs include English language training, instruction in the role of a military in a democratic society, military justice training, and educational activities designed to teach officers how to manage and profit from ethnic diversity within the ranks.

U.S.-Belarus Defense Cooperation

U.S. willingness to engage in even closer defense cooperation with Belarus is based on the Belarusian government's demonstrated commitment to arms control and confidence-building efforts to enhance international security. Aside from its decision to reduce sharply the size of its own armed forces, Belarus now has ratified START and NPT and is moving to comply with its Conventional Forces in Europe (CFE) obligations. Defense cooperation with Belarus thus demonstrates U.S. support for these Belarusian actions while helping to achieve the additional goal of reduced international tensions. The goal of developing closer U.S.-Belarusian defense cooperation advanced several steps in 1993:

- For the first time, Belarus received funds under the International Military Education and Training program, which were used to provide a language lab and other support for the MOD's new English language program.
- In July, Defense Minister Kozlovskiy made his first visit to the United States when he accompanied the Head of State on a visit to Washington. He returned to Washington in October as the guest of the Secretary of Defense.
- In September, the first resident U.S. Defense Attache assumed his post.

During MOD Kozlovskiy's October 1993 visit, the two sides signed a Memorandum of Understanding establishing the formal basis for a broad range of defense cooperation activities, including exchanges of visits between the Secretary of Defense and Belarusian MOD, the respective chiefs of staff, and various other senior defense officials; and working level meetings on such issues as defense budgets, the environment, the transition of military personnel to civilian jobs, and other national security issues. Military-to-military contacts will focus on ways to help Belarus meet its goals of creating a much smaller force, improving officer education, and enhancing the social welfare of military personnel and their families.

U.S. Defense Cooperation with Other Successor States

Since the emergence of independent defense establishments in the new states following the collapse of the Soviet Union, DoD initiated programs designed to address the formation of military institutions committed to the security of their nations, democratic principles, and ready to cooperate with other nations in the support of international efforts to guarantee security in troubled regions. Senior defense officials have visited each new state to begin a dialogue on mutual interests, and DoD has hosted visits by these officials to U.S. military units. Defense attaches are in place in over half of these nations to engage the host government in a continuing security dialogue.

The Secretary of Defense in May 1993 took part in the dedication of the Marshall Center in Garmisch, Germany. This center has been designed to bring together defense and military officials of Eastern Europe and the former Soviet republics to conduct seminars and other programs to assist the new Ministries of Defense in establishing laws, policies, and procedures that will best protect the interests of their nations and their citizens in cooperation with other

nations supporting democratic reform. Representatives of most of the states have already visited the center to take part in one or more of the available programs.

As it has with many other countries with whom the United States has positive relations, the United States has offered, or will propose, to provide assistance to the former Soviet republics under the IMET program. Establishment of programs with Moldova and the Caucasus nations (Georgia, Azerbaijan, and Armenia) awaits a peaceful settlement to their armed conflicts, and cooperation with other Central Asian nations has been deferred until they implement political and economic reforms. Nonetheless, the United States hopes ultimately to be able to establish programs with each successor state.

Conclusion

The initiatives that the United States is developing with the states of the former Soviet Union have produced a solid basis for continued progress. The breadth and depth of contacts established in 1993 involving senior defense officials are unprecedented and reflective of the U.S. commitment to fundamentally alter relations, moving from the dangerous confrontations of the Cold War period to a cooperative defense partnership.

Presidents Clinton and Yelisin charted a path for their respective nations to build trust and cooperation. Using this as a model for Russia and the other new states, DoD has made the success of this relationship one of the key U.S. security policy objectives for the years ahead. The ability to reallocate resources to critical domestic needs and to simultaneously provide security for its citizens beyond that which was provided over the past four decades will be the measure of U.S. success.

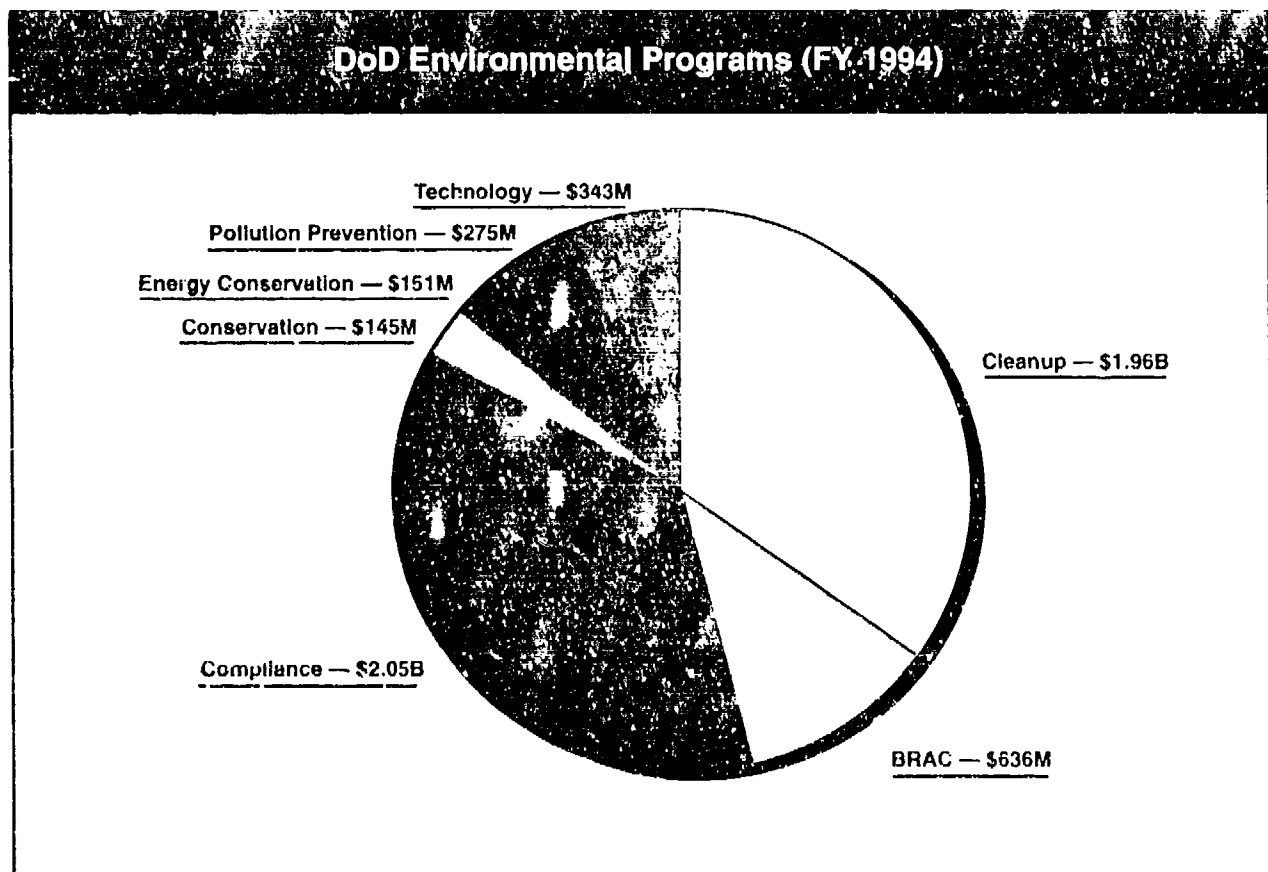
ENVIRONMENTAL SECURITY

Introduction

The new security era has generated increased emphasis on environmental threats to national security. As a result, the Department mobilized aggressively to meet these environmental threats and better fulfill its responsibilities. Reflecting the Clinton Administration's commitment to preserve and protect the environment, DoD created a new Office of the Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)). The importance of environmental security to national defense was acknowledged in the Bottom-Up Review.

A New Approach

New environmental, health, and safety threats to U.S. security have emerged over the past two decades. They threaten U.S. national security and quality of life. They also threaten the Department's military mission. DoD is spending large sums of money to clean up contaminated sites, to dispose of the wastes generated, and to solve other environmental problems. The Department's environmental programs are illustrated in the chart below.



The new security era requires a comprehensive approach to solving DoD's environmental problems. In the Defense Performance Review and the Bottom-Up Review, the Secretary of Defense outlined his new vision of national security. It includes the defense of natural resources that sustain quality of life and are a source of strength for the nation.

The mission of DoD's Environmental Security program is to strengthen national security by integrating environmental, safety, and occupational health considerations into U.S. defense and economic policies; to ensure responsible performance in defense operations; and to maintain quality installations to support a ready force. The premise for this program is that investing in preventive measures is the best way to protect health and the environment, to reduce the costs of complying with environmental laws, and to clean up past contamination, and liability associated with pollution. The major components of the Environmental Security program are cleanup, compliance, conservation and installations, pollution prevention, and technology.

Restoring DoD Facilities

DoD is responsible for environmental contamination resulting from decades of operations both in the United States and overseas. DoD has been engaged in cleanup activities at about 1,800 military installations and at over 8,000 Formerly Used Defense Sites. Ninety-four of the stateside installations are listed on the Environmental Protection Agency's (EPA) Superfund National Priorities List of most contaminated sites. DoD is also cleaning up about 66 military installations that are scheduled for closure or realignment under the Fast Track Cleanup Program announced by President Clinton in July 1993. This program is intended to return property expeditiously to local communities for reuse and economic redevelopment.

In 1984, Congress created the Defense Environmental Restoration Account (DERA) to fund cleanup of contaminated sites. Although some progress has been made, the Department recognizes the need for fundamental change in the cleanup process. Too much effort has been devoted to studies rather than to actual cleanup, resulting in paralysis-by-analysis. The Department is now expanding its efforts to shift from study to actual cleanup of contaminated sites. In 1994, DoD will devote \$2 billion of DERA funds to cleanup activities and, for the first time, will spend more money on cleanup than on studies and investigations.

The Department is committed to making the process more efficient and buying maximum cleanup for the public's tax dollars. The Environmental Security program is developing a risk reduction framework that will tie decisions on cleanup remedies to risk and cost-effectiveness.

Other near-term goals for cleanup at active installations include:

- Making more use of innovative cleanup technologies;
- Using more interim measures to reduce threats at environmental hot spots; for example, providing alternate drinking water supplies to nearby populations or quickly removing sources of contamination;
- Developing and enhancing partnerships with stakeholders, especially affected communities and federal and state regulators;

- Using lessons learned from completed sites to design generic remedies and technologies for solving common cleanup problems and screening all sites for adoption of such remedies; and
- Shortening the time for completion of studies and designs.

FAST TRACK CLEANUP

The cleanup process is complex, time consuming, and burdensome to communities affected by closing bases. On July 2, 1993, President Clinton announced a new Fast Track Cleanup Program for DoD installations designated for closure. This program is a sharp departure from the past. It consists of the following elements:

- Establishing Base Cleanup Teams — An on-site professional cleanup team of DoD, Environmental Protection Agency, and state environmental experts established at all closing installations where property will be made available for transfer to the local community. This team oversees the installation cleanup program and makes appropriate decisions. The team will conduct a bottom-up review of all cleanup schedules and projects and will develop a Base Realignment and Closure (BRAC) cleanup plan for the installation.
- Speeding up the National Environmental Policy Act (NEPA) Process — DoD will prepare a single NEPA document for outlining alternate property uses with the community's own reuse plan as the preferred alternative. With the help of a planning grant, which DoD will provide, the community can quickly develop its reuse plan. The Department will then complete the required NEPA documentation within 12 months from the date Congress approves the base closure list.
- Involving the Public — DoD will promote local community and public involvement through establishment of Restoration Advisory Boards at each closing installation. These boards consist of DoD, EPA, and state and local community representatives reflecting diverse interests. They serve as a forum for exchange and discussion of cleanup program information. Through these boards, the Department will make information readily available and will encourage and respond to public comment.
- Parcelization — Through the use of an Environmental Baseline Survey, DoD will determine the availability of clean parcels for reuse by the local community. This determination will be made within 18 months of listing a closing base. If the property has a specific use identified, the process will be completed within nine months.

Cleanup is one of the most important aspects of DoD's work to revitalize closing bases. How well the Department returns property to productive civilian use will serve as an indicator of its ability to work with state and federal regulators, Congress, and the public. In 1994, DoD will

spend \$617 million from the Base Realignment and Closure Account established by Congress for environmental work at closing bases. DoD intends to have fast track cleanup plans completed for all bases by April 30, 1994.

Complying with Environmental, Safety, and Health Laws

DoD's operations are subject to the same environmental, safety, and health laws and regulations as private industry, as well as to additional requirements for federal facilities. Overseas there are myriad laws and acceptable standards of behavior. The DoD goal is to achieve full and sustained compliance with all U.S. legal requirements. To comply with environmental protection, safety, and health laws, the DoD annually:

- Obtains thousands of air emission permits; hundreds of water discharge permits from sewage, industrial, and waste-water treatment plants; and storm water permits for every base;
- Manages 300 to 400 permits to treat, store, or dispose of hazardous waste under the Resource Conservation and Recovery Act;
- Abates thousands of Occupational Safety and Health Administration discrepancies;
- Manages 30,000 regulated underground storage tanks; and
- Prepares spill prevention and response plans at every base.

The Department also faces new challenges in compliance, including the waiver of sovereign immunity under the Federal Facility Compliance Act and new requirements to report the acquisition, use, and release of toxic chemicals at every base under the President's Executive Order on Pollution Prevention and Right to Know in the Government.

During FY 1994, DoD will spend about \$2.05 billion on environmental compliance. The Department has identified several opportunities to improve overall program performance and cost control including periodic compliance self-assessments, improved training and education, and an improved budgeting system.

Near-term compliance goals include the implementation of annual comprehensive audits for every major installation, reducing open enforcement actions 50 percent from 1993 levels, upgrading fire training areas; constructing waste water treatment plants, and upgrading underground storage tanks to meet new groundwater protection requirements.

Conserving Resources

The goal of DoD's conservation program is to provide a healthy coexistence between natural and cultural resources and the readiness requirements of the military. DoD consumes approximately 2 percent of the nation's total energy supply, uses over 200 billion gallons of fresh water each year, and is the steward for 25 million acres of public lands across the country. These lands

contain fragile ecosystems and endangered species, irreplaceable historical and archeological sites, and many other important natural and cultural resources, including:

- 300 threatened and endangered species residing on 211 bases;
- The largest federal archeological collection in the world; and
- Facilities on the National Historic Register.

Good stewardship in addition to numerous public laws and regulations requires that the Department conserve and protect these resources including the National Historic Preservation Act, the National Environmental Policy Act, the American Indian Religious Freedom Act, and the Archeological Resources Protection Act. DoD is committed to ensuring that all bases have inventories and plans for managing their wetlands, threatened and endangered species, and cultural and historical resources.

The Department faces the difficult task of protecting these resources while supporting the military mission. Military operations do not have to result in abuse of the land. In fact, military ownership often provides sanctuaries for many species or protection for cultural resources as these lands do not have the kind of development and other activities that degrade natural habitats. But because military operations can cause significant damage, DoD is seeking new training methods and innovative technological solutions to mitigate these effects. For example, the Department is promoting the increased use of computer simulations to reduce the need for field operations that cause environmental damage.

DoD is also committed to accomplishing the new energy and water conservation requirements under the 1992 Energy Policy Act, including establishing goals to reduce energy consumption 20 percent by the year 2000 and converting a portion of DoD's nearly 200,000 administrative vehicles to use alternative fuels. By the end of 1995, the Department will have acquired over 10,000 Alternative Fuel Vehicles. The Secretary of Defense has directed that \$983 million be added to the Department's existing 5-year budget of \$200 million for energy resource management.

LEGACY

The Legacy Resource Management Program has also helped DoD to be a better steward of U.S. resources. The Legacy program was established by Congress through FY 1991 legislation to support innovative projects that protect and care for DoD's natural, cultural, and historic resources. In the past three years, Legacy has funded almost 800 projects including:

- A program to catalog DoD's archeological collections and determine future curatory needs. DoD owns one of the largest archeological collections in the nation. DoD is seeking to ensure facilities can care for these collections forever.
- A project, conducted in partnership with the San Diego Zoological Society, the University of California, Berkeley, the Western Foundation of Vertebrate Zoology, the U.S. Fish and Wildlife Service, the California

Department of Fish and Game, and the Animal and Health Inspection Service of the U.S. Department of Agriculture to aid in the population recovery of an endangered bird species, the San Clemente Island Loggerhead Shrike.

- A project to study and develop the legal framework for allowing Native Americans access to religious and sacred sites located on DoD lands.

Preventing Pollution

The newest DoD strategy in environmental protection — pollution prevention — seeks to attack environmental problems at the source by considering material and energy used in design, construction, operation, maintenance, and disposal. The solution to long-term cleanup and compliance problems is the development and acquisition of environmentally sound systems. Pollution prevention will limit skyrocketing cleanup and compliance costs and reduce risks to public health, workers, and the environment.

The Department is committed to becoming a leader in pollution prevention through acquisition and procurement practices, through the development of innovative technology, and through the creation of better chemical management and accounting systems. DoD's goal is to prevent future pollution by reducing hazardous material use and releases of pollutants into the environment to as near zero as feasible. For example, the Department set a goal of reducing hazardous waste 50 percent between 1987 and 1992, and attained the goal in 1991. The Department is also committed to:

- Implementing the Pollution Prevention Executive Order signed last year by President Clinton requiring federal facilities to comply with requirements of the Emergency Planning and Community Right-to-Know Act to notify local emergency planning committees of all toxic chemicals stored or used at facilities. Federal agencies will also be required to develop a written strategy to eliminate or minimize acquisition of hazardous or toxic chemicals and to develop a strategy to meet a voluntary goal of 50 percent reduction by December 1999.
- Reducing or eliminating provisions of military specifications, military standards, technical orders, and standardized documents that direct DoD to use hazardous or toxic substances;
- Reducing toxic releases and the generation of solid and hazardous waste, focusing on source reduction;
- Providing incentives to promote more efficient material and energy procurement and use, including reuse, recycling, and market creation for recycled materials;
- Ensuring life cycle environmental costs and benefits are internalized in acquisition and supply system standards; and
- Reducing non-mission essential use of ozone-depleting substances.

Technology: The Cutting Edge

Cutting across all DoD environmental programs is technology. Accelerating the development and use of new environmental technology will result in faster, cheaper, and more effective cleanup; less cost in complying with environmental, safety, and health laws; more creative conservation initiatives; and a greater ability to prevent pollution at the source.

The DoD Environmental Technology strategy is to match technology investments to address real environmental needs; to identify technologies which provide the highest payback; to engage in technology partnerships to stimulate innovative dual-use technology development; and to expedite the use and commercialization of technologies.

The DoD Environmental Technology program has established a process to coordinate, integrate, and prioritize environmental technology research and development projects across the military departments. By FY 1995, the program will implement a tri-service environmental quality research and development strategic plan.

Under the Strategic Environmental Research and Development Program (SERDP) established by Congress, the Department is working to stimulate the development of environmental technologies to meet both DoD and commercial environmental goals. With a \$160 million budget for FY 1994, DoD is supporting some of the technologies of the future, such as the Electron Beam Dry Scrubber that may be able to efficiently turn dirty, high-sulfur coal emissions into a fertilizer, resulting in cleaner water, air, and a commercial product.

Finally, the Department is working in partnership with the Western Governors' Association and the Departments of Interior, Energy, EPA, and state regulatory agencies to demonstrate innovative technologies for environmental restoration at military bases and to meet federal and state regulatory requirements. Under a pilot initiative, regional working groups have been established to explore waste technology development for four major waste areas: mixed hazardous and radioactive waste, abandoned mine wastes, munitions wastes, and wastes at military bases.

A Global View

The Department has historically lacked a coordinated approach to international environmental security issues. As a result, DUSD(ES) has established a new office of International Activities.

The Department's new international environmental strategy is based on the following critical elements:

- **Overseas Site Returns.** By mid-September 1993, the United States had announced 51 percent of its overseas sites for closure. By 1996, that figure is likely to reach 54 percent, or approximately 900 sites. Environmental considerations are central to ensuring that U.S. resource constraints and timetables are met and host-nation economic concerns addressed. DUSD(ES) developed a policy based on consultation and burdensharing with host nations to meet these objectives.

- **Overseas Restoration Policy.** DoD is currently working with the Military Services to develop a uniform policy with respect to environmental restoration at operating bases overseas. The policy will be based on the principles of protection of human health and safety, and joint financing with the host country.
- **International Cooperative Agreements.** Cooperation in the development of environmental technology is one of the Department's great untapped opportunities for fulfilling the environmental security mission. By facilitating bilateral agreements with advanced nations, the Department can speed the development and transfer of innovative technologies for defense-related environmental problems.
- **Environmental Security Leadership.** The Department is earning a reputation for strong environmental leadership within NATO and the expanded forum of the North Atlantic Cooperation Council. In 1994, DUSD(ES) will convene international meetings on a variety of topics, one of which is Noise Abatement Receiver Technology used to minimize noise pollution from overflight activity.
- **International Environmental Security Assistance.** Part of DoD's effort to prevent the reversal of democratic reforms in Eastern Europe and the former Soviet Union is bilateral security assistance. Environmental security assistance is an important component of this aid. Educating Eastern European military personnel on environmental issues holds the potential to stop the rampant spread of contaminants, improve the health of soldiers and surrounding populations, speed conversion of military facilities to economically viable use, and ease historical distrust between populations and militaries in this part of the world. Many of these principles were applied to a \$25 million environmental security assistance pilot project granted to Belarus in 1993 under congressionally directed Project Peace.

Defense Environmental Security Council (DESC)

The Department recognizes that Environmental Security is affected by many Defense functions. In order to steer and coordinate the overall program and integrate participation of the many functional areas involved in Environmental Security matters, Secretary Aspin created DESC and the committee structure. This Council, which is chaired by the DUSD(ES), and the committee structure is vital to the success of the Environmental Security mission. The Council and committee structure will have central roles implementing the Environmental Security aspects of the Bottom-Up Review, Defense Performance Review, and Secretary of Defense Decisions on Roles, Missions and Functions of the Armed Forces of the United States.

Conclusion

The Department of Defense recognizes the importance of achieving and maintaining environmental quality at all DoD installations and facilities. Thus, it is committed to cleaning up environmental damage resulting from past practices; meeting all environmental, safety, and health standards applicable to its present operations; managing responsibly the natural and cultural resources it holds in public trust; and eliminating pollution resulting from its activities wherever possible.

Defense Management for the New Era

Part III

ECONOMIC SECURITY

Introduction

American national security has always rested on the twin pillars of military capability and economic strength, but the relationship between these two assumes new significance, complexity, and dimensions as the defense budget is reduced. In the new security era, the Department is taking important steps to strengthen economic security including increased efforts to develop dual-use technologies with military and commercial applications, more effective assistance for base closure communities, a robust program for defense reinvestment, and enhanced armaments cooperation with allies. To focus attention on these and other economic issues, the Department established a new position of Assistant Secretary of Defense for Economic Security.

Dual-Use Technology

Since the end of World War II, the Department's spending for military systems and research has been concentrated in a technology and industrial base built exclusively to meet defense needs. The reduced defense budgets of the 1990s are simply not large enough to continue DoD's reliance on an infrastructure that is unique to defense. Instead, new approaches are required.

The Department is charting a new course in defense acquisition, research, and development by taking greater advantage of dual-use technology and the strength of the entire U.S. economy. Wherever possible, emphasis will be on technology that is dual use rather than military unique. From the outset, research and development will be pursued to achieve both commercial and military applications.

This new emphasis on dual use represents a clear break with the past. Before, making the fruits of defense research available to the public has not been a high priority. The Department assumed defense technologies would spin-off into commercial applications, more or less on their own. This spin-off model no longer applies. DoD recognizes that transferring technologies from defense to commercial applications is a complex process that requires a new approach and more active involvement from the Department.

An increased emphasis on dual use offers broad advantages to the nation's economy. The Department's research and development strategy will now focus on technologies with important commercial as well as military applications. This strategy will vastly increase the number of cost-effective, productivity-enhancing technologies that DoD-supported research contributes to the commercial economy.

DoD is implementing the new focus on dual use on a number of fronts. The Department's premier dual-use program for industry is the Technology Reinvestment Project (TRP). The TRP will develop dual-use technologies, provide manufacturing and technology extension assistance to small businesses, enhance U.S. manufacturing skills, and assist displaced defense industry

workers. The Department is also carrying out separate dual-use research and development programs in key technology areas such as advanced materials, communications, and information processing. In addition, the Department recently encouraged its contractors to take advantage of statutory and regulatory changes that allow them to pursue dual-use research and development through DoD-funded independent research and development.

The Department is encouraging companies to develop dual-use technologies through the Small Business Innovation Research (SBIR) program. The SBIR program supports innovative technologies being developed by small companies, and DoD has increased the program's emphasis on funding projects with dual-use applications.

The Department is also providing more flexibility with respect to intellectual property rights to encourage more companies to participate in dual-use efforts. Many firms have been reluctant to perform government research and development because of concerns that patent and technical data rights will become available to competitors. The Department's dual-use partnerships for advanced research restrict government patent and technical data rights to those deemed absolutely necessary.

Authorities provided by Title III of the Defense Production Act have successfully been used to establish dual-use capabilities. These authorities allow DoD to provide purchase commitments and serve as an incentive for manufacturers to establish or expand vital defense production capabilities. In many cases, the capability can be adapted for commercial use as well. For instance, discontinuous reinforced aluminum is an advanced composite material that is as light as aluminum but stiffer than titanium. The material, which is used in aerospace applications, is also being marketed for high performance bicycles.

To further dual-use efforts, the Department is seeking closer ties to the commercial high technology industrial base, striving to better understand the dynamics of industries critical to national security, and developing policies and programs to provide key industries with a strong economic foundation. It is emphasizing dual use early in the development of new military systems to maximize the use of commercial components and subsystems. It is also seeking to more closely integrate commercial manufacturing and business practices into military purchasing, the benefits of which are described in the chapter on acquisition reform.

Dual-use policies and acquisition reform will remove barriers to defense use of the commercial sector and that will have big payoffs:

- Allow DoD to take advantage of superior technologies in the commercial sector. In some areas important to defense, commercial technologies increasingly exceed military-unique ones. Incorporating these into military systems will help maintain unquestioned technological leadership.
- Result in reduced costs. The competitive pressures of the marketplace increase the cost-effectiveness of dual-use technologies.
- Shorten the time it takes to incorporate the state-of-the-art into military systems. By increasing its reliance on available commercial technologies, DoD can reduce considerably the time required to field new capabilities.

- Allow DoD to draw upon a larger industrial base that is more diverse, capable, responsive, and flexible, instead of unique defense production facilities that may have limited expansion capacity. During a crisis or given the need to reconstitute larger forces, dual-use output could be transferred from commercial to military uses.

There are, of course, a limited number of military capabilities for which the dual-use approach is inappropriate — those that are both essential for meeting defense requirements and are truly unique to defense. The Department will seek to ensure a viable technology and industrial base for these capabilities through appropriate industrial base policies and programs.

The Industrial Base

Defense budget reductions have been especially steep in areas related to the industrial base. The entire defense budget declined in real terms by 30 percent between Fiscal Year (FY) 1985 and FY 1993, but the portion devoted to military procurement fell more than 50 percent. This suggests that the defense-unique industrial base of the future will become very different, and much smaller.

In light of these reductions, the Department is developing plans and policies to assure the continued availability of critical military systems to the armed forces. The Department is also developing plans to ensure that designated critical items will be available to support contingency operations. The Department is rigorously assessing relevant sectors of the industrial base to identify their essential elements and to ascertain their present and future viability. In cases where anticipated commercial capabilities are not adequate, steps may be required to sustain defense-unique design, engineering, and production assets. The Department has already implemented special actions to ensure that a number of defense-unique capabilities are maintained, including nuclear propulsion for ships and submarines. These cases will be the exception, not the rule. As a practical matter, there is no way to prevent the size and diversity of the defense-unique industrial base from eventually reflecting the reduced level of demand for its products.

The Department will rely on market forces to the maximum extent practicable to guide the consolidation of the defense industrial base. Recognizing the inevitability of smaller markets and heavier competition, many defense contractors have taken their own steps to adjust — by diversifying into nondefense markets, merging with or purchasing other firms, or shrinking to match the smaller market. These steps represent the normal response of market forces to declining demand. They will produce a smaller, but still viable defense industry.

Base Closure and Realignment

The President and the Department are committed to closing and realigning domestic military bases in ways that dramatically reduce the local economic impact. On July 2, 1993, the President announced a major new program to speed the economic recovery of communities where bases are slated to close.

Rapid redevelopment and creation of new jobs in base closure communities are the goals of the President's initiative. From FY 1993 through FY 1997, program resources will total about \$5.0 billion, including \$2.8 billion in economic development and transition assistance for base closure communities and workers, plus \$2.2 billion for environmental cleanup. The Department is now aggressively pursuing the President's initiative, which has the following five key elements:

- Jobs-centered property disposal that puts local economic development first. Working with Congress, the Administration changed Federal law to allow the Department to turn over property at a discount or for free when community development plans generate economic revitalization and job creation.
- Fast-track cleanup that removes needless delays while protecting human health and the environment. The Administration is tackling one of the main roadblocks to rapid base reuse by sending professional teams into action at closing bases, quickly identifying clean parcels for early reuse, selecting appropriate parcels for leasing where cleanup is underway, and accelerating the entire cleanup process.
- Transition coordinators at major bases for closure. The Department has named transition coordinators for major bases scheduled for closure or substantial realignment to work with communities on cutting federal red tape and freeing the base for rapid, productive reuse. DoD also created the Base Transition Office, which supports the work of the coordinators. Past base closures were hindered by the lack of a single, well-informed point of contact and community champion on the base.
- Easy access to transition and redevelopment help for workers and communities. The Administration is revitalizing federal transition and redevelopment assistance programs with adequate funding, vigorous administration, and streamlined access.
- Larger economic development planning grants. Faster, more robust financial support is the essential first step in base reuse and economic development.

While the task of remaking the economic foundation of a community affected by base closure is never easy, base land and facilities — previously inaccessible — can be a community's single greatest asset in charting a different future. The President's initiative will give local communities the funds and technical assistance necessary to suitably use these assets and plan for the future.

Defense Reinvestment

The Department is deeply committed to effective defense reinvestment programs. It recognizes that adjusting to smaller defense budgets will not be easy for military personnel, DoD civilian employees, defense industry workers, communities, and companies. As the President said, however, "Defense conversion can be done and can be done well." The Department, in close

cooperation with the White House National Economic Council and other departments and agencies, is working hard to ensure that it is indeed done well. The Department is carrying out programs to help people, communities, and businesses.

PEOPLE

The Department seeks to reduce the size of the armed forces by honoring the voluntary choices of career personnel to the maximum extent possible and by minimizing layoffs. To accomplish these goals, DoD is carrying out the Voluntary Separation Incentive, Special Separation Benefit, Temporary Early Retirement, and other programs for military personnel, as well as retirement and resignation incentives for civilian employees. DoD is also offering transition assistance and employment services and is executing new programs to train former defense personnel in teaching, law enforcement, and environmental fields. These and other transition assistance programs are described in greater detail in the chapter on personnel.

The Department is also working closely with the Departments of Labor and Veterans Affairs and others to carry out effective transition assistance programs, including the Defense Diversification Program and Service Member Occupational Conversion and Training.

ASSISTANCE TO COMMUNITIES

For over 30 years, DoD has worked closely with communities to ease the effects of changes in defense spending. During the drawdown, this mission takes on increased importance. Accordingly, the Department is expanding dramatically its community revitalization efforts. The key to DoD's approach is working with and supporting community efforts, rather than imposing solutions from the outside. The Department recognizes that local communities are the best judges of their strengths and opportunities. Experience over the years has demonstrated that unified, well-organized, innovative, and energetic communities can indeed successfully adjust to defense cuts.

In addition to implementing the President's initiative for speeding the reuse of closing bases, the Department is expanding the work of its Office of Economic Adjustment (OEA). OEA works closely with other federal, state, and local government agencies to assist communities affected by base closures and cutbacks in defense-related private industry. The Department has tripled OEA's budget, commensurate with its increased role and responsibilities.

DoD is also undertaking new efforts to help address pressing community needs. For example, the Department is encouraging former military personnel to take jobs in public and community service. The Department is also funding the National Guard Civilian Youth Opportunities Pilot Program and Junior Reserve Officers Training Corps Career Academies Programs to help meet critical needs among the nation's high school-aged youth.

REINVESTMENT PROGRAMS FOR THE INDUSTRIAL BASE

The Department is moving aggressively to help companies adjust to reduced DoD purchases. Acquisition reform is an essential element of reinvestment efforts. The Department is also executing several programs that will foster reinvestment in defense industries, including the TRP and other dual-use programs.

Armaments Cooperation

Armaments cooperation with allies can contribute significantly to economic security by leveraging resources through cost sharing and the economies of scale afforded by coordinated research, development, production, and logistics support. In addition, armaments cooperation will improve operational capabilities by furthering the deployment and support of common, or at least interoperable, equipment with allies, and by exploiting the best technologies, military or civilian, available for the equipping of alliance forces. For these reasons, the Department has committed itself to a renaissance in armaments cooperation. A new Armaments Cooperation Steering Committee has been created to assure armaments cooperation receives the appropriate priority, resolve issues expeditiously, and ensure the Department's approach is consistent with U.S. national security policy.

Some initiatives which might be appropriate to begin such a renaissance were recently suggested to North Atlantic Treaty Organization (NATO) by the United States. These include alliance ground surveillance, combat identification, theater missile defense, dual-use technologies and defense reinvestment, and computer-aided acquisition and logistics. DoD has also raised several ideas for more effective defense technology cooperation between the United States and Japan. The goal of these efforts is to seek a better balance in the flow of defense technology between the United States and Japan.

Conclusion

The new era requires new thinking about economic security. It is clear that in this era meeting national defense needs and enhancing economic security are complementary, not conflicting objectives. When DoD pursues dual-use technologies and acquisition reform, it can purchase better products at lower cost and help the economy. When the Department eases the transition of dislocated workers and separating military personnel, it speeds their reentry into the labor force. When DoD helps communities adjust to reduced defense spending, it helps spur economic growth and revitalization. The Department will continue to work aggressively to support U.S. economic security.

FINANCIAL MANAGEMENT

Introduction

Inherent in the new security era is the call for the Department to assess and improve its financial management activities. Because of its huge budget and support structure, financial problems in DoD can have dramatic and troubling consequences. For example:

- Last year DoD could not match some \$19 billion in disbursements to specific requirements in acquisition contracts. When a disbursement cannot be matched to an appropriate obligation of funds, the Department runs the risk of paying twice for the same good or service.
- During the first six months of FY 1993, the Defense Finance and Accounting Service (DFAS) overpaid contractors by nearly \$750 million, which then had to be recovered.
- About 1,100 Operation Desert Storm veterans continued to receive monthly paychecks, some for nearly two years after their discharge from military service.
- The Department received unfavorable reports on 26 out of 28 financial audits during the past year. Were a business to receive such audit disclaimers, no bank would loan it money for operations.

These clear failings in DoD's financial management systems are frequently cited as evidence of an inept, dispirited bureaucracy with little regard for its stewardship responsibilities to the taxpayer. Often in the past, the Department's response was to claim that the charges were exaggerated, or that the accusation was a simplistic distortion of the facts. Irrespective of the truth, such a dialogue did not engender much outside confidence in the Department's candor or ability to deal with its problems.

The Department's new leadership is determined to make financial management improvement one of the major initiatives of its tenure. DoD will work with, not against, congressional committees and others seeking to help it advance genuine remedies.

Fundamental Causes of DoD Financial Management Problems

There are several underlying causes for the current financial management problems confronting the Department.

LEGACY OF VERTICALLY ORIENTED DISPARATE ORGANIZATIONS

When DoD was established in 1947, it retained the existing organizations with their vertical chain-of-command mode of operations. Management systems, including financial ones, were

geared to report information up through these vertical channels. When automating or modernizing their systems, these organizations were not compelled to emphasize horizontal connections across organizations of like functions, such as pay or contracting. These sporadic, uncoordinated actions produced duplicative and noninteroperable systems, with policies and practices inconsistent across the Department.

EMPHASIS ON COMBAT OVER SUPPORT

Over the years, the Department gave top priority to the development of combat and combat support capabilities, as well it should. Accounting, business-type efficiency, and indirect support functions were secondary considerations of top DoD leaders. Now, however, this limited attention to financial management threatens U.S. combat power in two ways: (1) financial management problems waste money that is needed more than ever to sustain sufficient combat power; and (2) whenever mismanagement surfaces, understandable congressional and public response is to often reduce overall DoD spending by more than would otherwise be the case.

PREDOMINANCE OF PHYSICAL OVER FINANCIAL CONTROLS

DoD's understandable emphasis on combat requirements places far more importance on developing, maintaining, and operating weapon systems such as tanks, ships, and aircraft than on tracking costs. It was far more important to know where combat aircraft were based, how soon they could be readied for combat, and what spare parts were on hand, than to capture the cost of any of these activities. This produced management systems based on physical controls — personnel strengths, numbers of weapons, operations and training tempo, etc. — not financial controls. Financial management systems were geared largely to the question, "Is the Department spending its funds the way Congress directed?"

COMPLACENCY ABOUT FINANCIAL MANAGEMENT PROBLEMS

Complacency has been widespread. The financial management community adapted to shortcomings and lacked a sense of urgency for correcting them. Senior DoD leaders did not consider financial management shortcomings as serious as those in other areas; and Congress never demanded the same attention to financial management and modernization as it did to readiness, weapons modernization, size and location of military facilities, and other issues.

The combination of these fundamental causes produced a financial management community lacking horizontal integration across common functions and business areas. It resulted in over 270 disparate finance and accounting systems many of which are incapable of interoperability. It produced astoundingly complicated operating procedures for integrating activities of different communities when forced to work together, such as payments (a finance function) for procurement contracts (an acquisition activity).

Blueprint to Reform DoD Financial Management

The Department has adopted a six-element blueprint to solve its financial management problems:

- Strict compliance with current requirements. Current legal and policy requirements may foster some inefficiency and redundancy, but DoD leaders will insist on strict compliance with them until new business practices are formulated and adopted.
- Re-engineer business practices. Long-term solutions will depend on re-engineering DoD business practices to break down the barriers that persist from the legacy of vertically oriented chain-of-command types of organizations. DoD needs to introduce fundamental changes in the way organizations operate. Merely modernizing the processing of information currently being generated would simply mean faster, fancier handling of data incapable of integration into useful results. The essential and most difficult remedy is to thoroughly study current procedures, eliminate needless or duplicative processes, and then standardize, consolidate, and make compatible the multitude of systems for generation of useful information.
- Standardize definitions, concepts, and practices. Currently, the Military Services and other DoD components lack common definitions for activities that are or should be essentially alike for all major Department organizations. Therefore, data from one component system cannot be compared with another for seemingly similar activities. Commonality and consistency across the Department clearly must be central to a re-engineering of its business practices.
- Design modern finance and accounting systems. After developing new business practices, the Department will design and implement new finance and accounting systems that can provide reliable and timely information.
- Align financial controls with management incentives. In DoD's past operations, no one — from senior commanders to supply sergeants — knew or could determine the true cost of choices they faced, for example, whether to repair or replace a damaged piece of equipment. At best, this meant that the least cost choice could not be identified. At worst, people chose the course that minimized costs to them, when that was not the least cost option for the Department if all costs were considered — a classic example of suboptimization. In one of the most important initiatives of the previous administration, the Defense Business Operations Fund (DBOF) took the first steps in the right direction of identifying the true cost of business-like decisions and introducing those costs as management incentives at all levels of command.
- Practice candor and engender confidence. The Department of Defense has serious, long-standing financial management problems. If DoD does not candidly acknowledge that reality, it cannot expect support in solving those problems and confidence in the overall stewardship of defense matters will be undermined.

Tools to Implement DoD's Financial Management Blueprint

THE DEFENSE BUSINESS OPERATIONS FUND

The Department continues to implement and refine the DBOF established in FY 1992 to serve as the corporate DoD financial structure within which many of the DoD support activities operate. The Fund essentially combined five industrial funds and four stock funds into a single revolving fund.

Revolving fund activities operating within the Fund, such as supply management and depot maintenance, function much like any private sector business. They sell their goods and services to their customers, which are typically the Department's operating forces. They are then reimbursed by the customer for the costs of those goods and services. The Fund activities, that is, the providers of the goods and services, set prices that recover the full cost of producing those goods and services. Only the full cost is charged; fund activities operate on a break-even basis. The customers make decisions about how much of these goods and services they are willing to purchase. It is this business-like relationship that provides the necessary incentives for both the customer and the provider to first understand the total cost of these support services and then, more importantly, make decisions that will minimize the support costs ultimately incurred by the Department while meeting operational needs.

In April 1993, a comprehensive review of DBOF was initiated to examine implementation of the Fund, assess its viability as a financial mechanism, and propose appropriate changes. The review validated the Fund's basic concepts. An extensive DBOF Improvement Plan was developed based upon this review and endorsed by the Deputy Secretary of Defense and the three Service secretaries. This plan identifies specific actions to improve the implementation of DBOF in four broad areas: accountability and control, DBOF structure, policies and procedures, and financial systems.

A major benefit of this review was the collaborative management process used to develop the DBOF Improvement Plan. Financial and functional officials from across the Department worked together to solve shared problems. This collaborative effort now has been institutionalized by the establishment of a DBOF Corporate Board. The Board is comprised of functional, as well as financial senior executives, who represent the interests of both DBOF customers and providers and, ultimately, the corporate needs of the Department.

The DBOF review, Improvement Plan, and Fund itself represent a serious and substantial effort by the Department to manage the costs of government services. The results of these efforts will provide decisionmakers the tools critical in minimizing costs and improving support to military forces.

SENIOR FINANCIAL MANAGEMENT OVERSIGHT COUNCIL

The centerpiece of DoD efforts to improve its financial management is the Senior Financial Management Oversight Council established on July 1, 1993, and chaired by the Deputy Secretary of Defense. The Council provides a forum for senior DoD leaders to review financial

management problems and to promptly formulate corrective actions for managers, who then will be held directly accountable for results.

The Council has nine members: the Deputy Secretary of Defense as chair; the Secretaries of the Army, Navy, and Air Force; the Vice Chairman of the Joint Chiefs of Staff; the Under Secretary of Defense for Acquisition; the DoD Comptroller; the Chief Financial Officer; and the DoD General Counsel. The Comptroller serves as the Executive Secretary. The DoD Inspector General, although not a member, is invited to attend as an observer, in order to avoid potential conflict of interest. The Council meets on the call of the Deputy Secretary of Defense, generally monthly. The Council is especially useful in providing a framework for re-engineering business practices across organizational or community lines, most urgently between DoD's financial systems and its various acquisition and personnel systems. The Council also serves as a forum for accountability — in effect it is the ultimate guarantor of accountability in the Department.

DEFENSE FINANCE AND ACCOUNTING SERVICE

DFAS serves as the primary mechanism for achieving standardization and integration of financial management practices within the Department. Its objectives are to provide more timely, comprehensive, and accurate financial data; consolidate and standardize the Department's diverse finance and accounting operations; and improve customer service while reducing costs. DFAS was activated in January 1991 and stands as a major step taken by the previous administration toward genuine reform. It now comprises 5 finance and accounting centers, 6 financial systems activities, European and Pacific program management offices, and over 300 finance and accounting offices situated on defense installations nationwide serving all DoD components.

DFAS began standardizing finance and accounting systems by adapting and deploying the former Air Force military pay system, presently known as Joint Service Software (JSS). Currently, both Air Force and Army active duty and reserve pay and Air Force Academy accounts are operational on JSS Active/Reserve component. Further, the Defense Civilian Payroll System provides standardized payroll support for approximately 192,000 Army, Navy, and Air Force civilian employees, including 45,000 added in FY 1993. Roughly 190,000 additional employees are scheduled to be added in FY 1994. The Defense Retiree and Annuitant Pay System pays both Air Force and Navy annuitant and retiree accounts.

A DFAS-wide, structured program -- designed around a concept of Total Customer Service -- was initiated during FY 1993. The program incorporated such initiatives as:

- A benchmarking effort to facilitate comparisons and dialogue with private and public firms considered the best in the business with respect to customer service;
- A global survey program to determine the current level of customer satisfaction and the kind and quality of service customers want;
- Periodic field visits, symposia, and operational review and analysis meetings with DFAS customers;

- Specific customer service training for employees; and
- Teleservices with technology initiative to provide customer service oriented tools, such as interactive voice response systems, automatic call directors, and imaging to the field offices.

The Defense Debt Management System has been implemented at all DFAS centers. The system standardizes how DFAS manages debts owed by individuals to the government and reduces the cost of the debt collection process.

The first major step for DFAS — the consolidation program — is well in hand and transition plans are now under way. Modernization of processes is already being identified and programmed. Additional functions will be transferred to DFAS as it continues to streamline and standardize DoD finance and accounting operations.

CHIEF FINANCIAL OFFICERS ACT MASTER PLAN

The Chief Financial Officers (CFO) Act of 1990 challenged the Department to reconfigure its financial processes to achieve the goal of an integrated financial management system and to produce auditable financial statements. Meeting this challenge will require the investment of major DoD resources over the next several years and will demand new business approaches in financial and other major operations. Diversity within the Department must be harmonized and complexity simplified to assure success in this endeavor. The Senior Financial Management Oversight Council provides the institutional mechanism to focus high-level attention on these required actions.

A CFO master plan has been developed to formulate actions and identify milestones for achieving needed changes in the Department's financial and other information systems. Included are efforts to improve compliance with revised policies and procedures and to create a single DoD-wide financial management manual, to replace numerous component-unique issuances. The plan has been submitted to the Office of Management and Budget as part of the Department's CFO Financial Management Five-Year Plan. The CFO master plan addresses system modernization across the Department, including more than DFAS plans.

FINANCIAL MANAGEMENT EDUCATION AND TRAINING

The future DoD financial management environment will be dynamic and characterized by fast-paced technical, management, and organizational changes that will particularly affect business management practices and systems. Education and training are the key components in DoD strategy to assist the financial management work force in effectively dealing with a dynamic environment. The DoD Comptroller established the Defense Business Management University (DBMU) to coordinate this effort. DBMU is responsible for ensuring that the financial management work force (approximately 88,000 civilian and military members) is being trained in the most cost-effective and efficient manner. Consisting of a small staff reporting to the DoD Comptroller, it will become the focal point of a consortium of all DoD institutions that teach business and financial management, as well as a vehicle to implement the responsibilities in the CFO Act.

This arrangement is similar to that of the Defense Acquisition University, established under Title 10 for the procurement community, and is congruent with approaches being used to manage education and training in other DoD functional areas. DBMU will provide an ongoing capability to identify and quickly implement needed changes in business management curricula, to eliminate redundant course development and delivery, and to implement distance-learning technology into the delivery of business management courses and training. It will also provide educational quality control through the direct participation of subject matter experts in curricula restructuring and course development.

Conclusion

Genuine reform of financial management in DoD will be nearly as monumental a task as restructuring America's defense posture to reflect the end of the Cold War. That daunting reality seems fitting, however, because the roots of DoD's financial management failings stretch back to the start of a combined Department of Defense replacing a War Department and a Department of the Navy.

There is much to learn from the example set by combat forces. Recent years have seen great progress toward ensuring cohesive or joint operations involving the combat forces of the four Military Services, due primarily to Goldwater-Nichols reforms. In contrast, DoD has barely begun such progress for its support structure, and there is not yet a consensus between itself and Congress on the mechanics of achieving progress.

Unfortunately, the Department cannot shut down its activities to correct its financial systems. Therefore, reform will be like changing the tire on an automobile travelling 60 miles per hour. On the other hand, progress of DFAS toward rationalizing finance and accounting is a positive first step.

To a large extent, improvement of defense financial management will depend on how Congress reacts to DoD reform efforts and to candid descriptions of the current shortcomings. On the one hand, the example of DBOF raises concern; when implementation problems occurred, the calls to abandon the initiative did not seem to acknowledge the pressing need for reform along the lines of DBOF. On the positive side, however, members of Congress generally understand the duplication now plaguing DoD's support activities and seem amenable to fair ways of streamlining, such as through the BRAC Commission.

Too often in the past, DoD has not faced up to its financial management problems, and in response, Congress imposed new reporting requirements and certifications or reduced DoD's management flexibility. Such measures were not directed toward the fundamental causes of the problems and so were of limited use in addressing those problems. Sometimes these measures do more harm than good. The Department's current leadership urges Congress to give it a chance to demonstrate its commitment to genuine financial management improvement.

ACQUISITION REFORM

Introduction

The post-Cold War era poses new political, economic, and military security challenges for the United States throughout the world. The Administration is committed to maintaining a strong, effective force capable of deterring aggression against the United States and its allies and responding to threats anywhere in the world where U.S. national interests are at risk. The President and Secretary of Defense are committed to maintaining a lean, high-tech, agile, ready-to-fight military force. At the same time, defense budgets are declining. By FY 1997, defense spending will decline in real terms by over 40 percent from 1985. Another pertinent trend involves advanced technology. It is increasingly available to the world -- and potential adversaries. In order to meet the challenges to national security and the requirements of national domestic policy, acquisition reform is imperative.

Why Change is Necessary

The DoD acquisition system is a web of laws, regulations, and policies adopted for laudable reasons over many years. This system was intended to ensure standardized treatment of contractors; to prevent fraud, waste, and abuse; to ensure that the government acquisition process was fair; to check the government's authority and its demands on suppliers; and to further socioeconomic objectives. The result is a system which is too cumbersome and takes too long to satisfy customer requirements. In addition, the system adds cost to the product in terms of the burden placed upon both DoD and its suppliers. These are costs which DoD can no longer afford if it is to efficiently meet mission requirements.

What Needs to be Changed

MAINTAIN TECHNOLOGICAL SUPERIORITY AND A STRONG NATIONAL INDUSTRIAL BASE

Historically, DoD has relied on an industrial base principally dedicated to supporting its requirements. Today, however, fewer vendors are either capable, or willing, to provide items or services DoD requires. DoD cannot afford to rely on an industrial base that is dependent on DoD for its existence. The Department must be able to promote the conversion of defense-unique companies, and expansion of a national industrial base capable of meeting its needs and competing in the world commercial marketplace. This can only be done by reducing barriers to companies selling commercial or dual-use technology products to the government.

Because the current acquisition process does not allow DoD to take full advantage of the procurement of commercial items to meet its requirements, the Department sometimes procures items that are technically inferior to their commercial equivalents. While DoD drove technology developments for many years, today the pace of commercial technology advancement in some

sectors far outreaches government sponsored research. The technology sectors where this is occurring are the same sectors that are critical technologies for military superiority (for example, computers, software, integrated circuits, communications, and advanced materials). By strongly encouraging procurement of commercial items, DoD will ensure the latest technology is procured to meet its requirements and a larger industrial base is available to meet its needs.

REDUCE ACQUISITION COSTS THROUGH ADOPTION OF BUSINESS PRACTICES CHARACTERISTIC OF WORLD-CLASS SUPPLIERS

The cost of the current acquisition process is too high. Reporting requirements, cost accounting practices, oversight, audit, and quality assurance provisions, while important to the process as a whole, typically add little or no value to the item itself and in combination, add cost, and contribute to an overloaded system. Government-unique product and process specifications and standards inhibit purchases of commercial and dual-use technology products, and often prevent companies from adopting the best management and manufacturing processes. In many cases suppliers have decided to establish separate business activities in order to conduct business with DoD, or alternatively, they choose to avoid business with DoD. Reforming the procurement process will reduce costs while increasing the size of the vendor base DoD relies on to accomplish its mission. Concomitantly, those vendors whose businesses are built around DoD specific requirements can be made more competitive in the world marketplace when the costs of military-unique requirements are eliminated from product costs.

The internal DoD acquisition system is based on outdated management techniques and philosophies. The system emphasizes conformance with rigid rules and regulations rather than the exercise of judgment and risk-taking. The layer upon layer of organizations, legislation, regulations, and policies is an impediment to the adoption by DoD of business processes that are characteristic of world-class customers today.

The Solution — A Vision for the Future

The world in which DoD must operate has changed beyond the limits of the existing acquisition system's ability to adjust or evolve. It is not enough to improve the existing system. There must be a carefully planned, fundamental re-engineering of each segment of the acquisition system if DoD is going to be able to respond to the demands of the next decade. In order to meet the national security requirements of the post-Cold War world and comply with national domestic policy, DoD must be able to procure state-of-the-art technology and products rapidly from reliable suppliers; utilizing the latest manufacturing and management techniques; assist in the conversion of U.S. defense-unique companies to dual-use producers; aid in the transfer of military technology to the commercial sector; and preserve defense-unique core capabilities. DoD must integrate, broaden, and maintain a national industrial base sustained primarily by commercial demand but capable of surging to meet DoD's needs.

The current acquisition process does not always meet these needs. To change this situation, acquisition reform at both the statutory and regulatory level is required. Changes need to be made in several specific areas: requirements determination and resource allocation, the acquisition process, and contract terms and conditions.

The National Performance Review provided DoD with the following guidelines for remaking its procurement system: move from rigid rules to guiding principles; get bureaucracy out of the way; give line managers more authority and accountability; give line managers expanded access to competitive sources of supply; and foster competition, commercial practices, and excellence of vendor performance. Using these guidelines, DoD has developed its vision of a re-engineered acquisition process — one which will ensure DoD will be able to maintain its technological superiority and a strong, globally competitive industrial base, and allow DoD to reduce its acquisition costs through adoption of commercial and other best business practices.

REQUIREMENTS DETERMINATION AND RESOURCE ALLOCATION (WHAT TO BUY)

The requirements process must be more closely integrated with the operational concepts and objectives, as well as the long-term resource allocation and budget process. The most effective solution to a deficiency in current military capability or an emerging need should be developed after balancing the most affordable, environmentally sound, technically feasible, and best solutions against realistic costs, schedule, performance, and industrial base considerations.

There must be a preference for commercial items in order to benefit from a broader industrial base. Requirements for systems, subsystems, and nonsystems acquisitions (including services) must be stated in terms of required performance. DoD-unique product specifications that inhibit the purchase of commercial items (either systems, subsystems, components, or services) or dictate to a contractor how to produce a product or provide a service will not be used, unless the DoD-unique product or process specifications or standards are the only practical way to ensure user needs are met.

New technology must be attainable through DoD's procurement process so that new systems are fielded with the latest technology available. This will be accomplished through prototyping, limited fabrication of advanced systems to determine producibility and operational effectiveness, and evolutionary development of and infusion of new capabilities in long-term stable production programs. As a result, the time needed to introduce new capabilities will decrease, excess contractor capacity will be minimized, and lean production processes will be encouraged.

Potential suppliers must be involved as early as possible in DoD cross-functional integrated product and process teams, for example, when generating new or modified system requirements. Such involvement will enhance the ability of the government to incorporate the latest technology in its planning and define the statement of requirements as clearly as possible.

DoD ACQUISITION PROCESS (HOW WE BUY IT)

Acquisition processes and policies should be simplified, focused on continuous process improvement, be more flexible and agile, and be tailored specifically to the type of acquisition (for example, commercial items, research, development, major systems acquisitions with little risk, with significant technical risk, etc.) while still protecting the public trust. The new process must facilitate and encourage the sharing of innovative or time-tested approaches to specific issues, so that time is not lost as processes are unnecessarily reinvented.

Oversight, testing, and inspection, both internal and external, should be designed in the least obtrusive manner necessary to add value to either the overall process or the particular

acquisition. DoD organizations (with the exception of those organizations whose mission is to perform inspection) should be team participants, not inspectors, both in relation to other organizations in the department, and with respect to their suppliers.

Reporting requirements, as necessary to ensure compliance with policy, should include requirements for data that already exist and can be collected without undue additional administrative burdens, to the maximum extent practicable. There must be a shift in management philosophy from use of after-the-fact inspections to review of supplier process controls as a means of ensuring product quality.

Policies and processes should be structured so that the fewest number of people are involved in a given process, and the need for reconciliation or coordination is minimized. The need for a particular law or policy to protect the government's interest must be balanced with the need for efficiency, cost savings, and the need to manage risk rather than avoid it. The acquisition process must be responsive to customer needs in a timely manner. The process must encourage continuous improvement through innovation in products and practices, both in government and industry (for example, increased use of Integrated Product and Process Development; agile manufacturing, information technology, and other commercial practices). The acquisition infrastructure and the time it takes to acquire products and services must be reduced. Clear measurements of system output must be established and functional stove-pipes eliminated. Finally, the Department should facilitate the development of people it employs in the process, enabling them to excel by providing appropriate education and training; empowering them to make decisions at the lowest level possible; and providing them with appropriate guidance, not rules.

CONTRACT TERMS AND CONDITIONS

One of the major themes of the new acquisition reform is that the Department can reap benefits from adopting commercial practice wherever practicable. This is true in contract terms and conditions for commercial products or services.

If two conditions exist, no government-unique terms or conditions should be required. These conditions are:

- The buyer-seller relationship is adequately regulated by market forces.
- The financial and ethical integrity of the government's acquisition process is adequately protected.

If there is a question about the integrity of the process or there is a need to further a social policy through use of a government-unique rule, then the benefit of those terms or conditions should be balanced against the cost to the government and industry of complying with the unique rules. As discussed above, the guiding philosophy should be risk management, not total risk avoidance.

In all contracts, the Department should be buying on the basis of best value and rewarding past contractor performance. DoD should also be moving away from a cost based system to a price-based system to the maximum extent practicable.

Approach

Because of its complexity, total acquisition reform will not happen overnight. Acquisition reform has been attempted many times before without overall success. In addition to identifying the need for change, developing proposals for change, and enunciating the guiding principles for a new acquisition system, DoD must ensure that changes will be accepted and institutionalized.

DEPUTY UNDER SECRETARY OF DEFENSE (ACQUISITION REFORM)

The Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)) is the focal point for the development of a coherent and practical step-by-step plan for re-engineering each and every segment of the acquisition system. The plan includes proposals to address the recommendations of the Section 800 Acquisition Streamlining Panel, and the creation of Process Action Teams to address other statutory and regulatory issues. In addition, the DUSD(AR) will conduct regular town hall meetings at various field organizations to hear firsthand issues of concern to the acquisition work force.

The DUSD(AR) has a small dedicated professional staff to lead or assist Process Action Teams and Working Groups to coordinate efforts addressing the priority change areas identified by the Department's senior management. The Office of the DUSD(AR) will also follow-up to ensure implementation of recommended changes. The staff is purposely small to foster reliance on integrated decision teams made up of individuals who are actively involved in the day-to-day acquisition process, and who are in the best position to develop specific plans for change.

DoD ACQUISITION REFORM SENIOR STEERING GROUP

The DUSD(AR) chairs a DoD Acquisition Reform Senior Steering Group comprised of the Vice Chairman of the Joint Chiefs of Staff; OSD General Counsel; the Comptroller; the Director, Defense Research and Engineering; the Director, Program Analysis and Evaluation; the Assistant Secretary for C³I; the Director of the Defense Contract Audit Agency; the Inspector General; the Directors of Defense Procurement and Acquisition Program Integration; the Service Acquisition Executives; and the Director, Defense Logistics Agency. Members from other organizations within DoD with acquisition authority or interest are invited to participate as advisors to the Steering Group. Representatives from the civilian agencies are also invited to attend meetings of the Steering Group where common interests converge. The Steering Group members make recommendations on the proposed acquisition reform goals and objectives, further identify areas for change, assist in establishing priorities, designate experts from their activities to serve on the process action teams, make recommendations to the DUSD(AR) on issues that could not be resolved by the teams, and ensure implementation of final plans of action within their organizations.

PROCESS ACTION TEAMS AND WORKING GROUPS

The Process Action Teams, which are key to the success of the acquisition reform effort, will be cross-functional and cross-service. They will be responsible for analyzing a current practice, identifying the resource implications associated with that practice, and identifying alternative

approaches consistent with the principles of the new acquisition system. They will be chartered to identify incentives to make the change to the new practice, recommend the best option for addressing the issue, and develop any new legislative, regulatory, or administrative changes required to implement proposed options. They will also develop measures of success in making the changes so DoD can track progress; develop specific implementation plans, including training of DoD personnel; and develop a process for follow-up to ensure the changes have been institutionalized (in particular to identify incentives and other mechanisms to ensure change to and compliance with the new processes and procedures). The Process Action Teams will include operational experts and staff advisors (as identified by the Acquisition Reform Senior Steering Group) from OSD, the military departments, and the defense agencies. The teams will also seek advice and participation from other federal agencies, congressional offices, and industry as appropriate.

While the DUSD(AR) examines ways to re-engineer DoD's business processes, other DoD organizations will continue to pursue changes in policies, practices, and regulations to make the existing system function more effectively. These efforts will be coordinated, as appropriate, with the DUSD(AR), either directly or through their Steering Group member, to ensure changes are consistent with the approaches being pursued by the Acquisition Reform Office.

Actions to Date

SECTION 800 PANEL REPORT

Through passage of the National Defense Authorization Act for FY 1991 (Public Law 100-510), Congress recognized and started the process of rationalizing, simplifying, and streamlining acquisition laws. Section 800 of this Act directed the Under Secretary of Defense for Acquisition to appoint an advisory panel of government and civilian experts for reviewing all acquisition laws affecting DoD. The Section 800 Panel completed and submitted its report to the Secretary and Congress in January 1993. The report identified laws unnecessary for the establishment of the buyer-seller relationship in government contracts while ensuring continued financial and ethical integrity in defense programs and protecting the best interests of DoD. The report was thoroughly reviewed by all acquisition elements of DoD. The comments received from these various elements were reviewed, compiled, and utilized as a basis for the preparation of legislative proposals to implement many of the recommendations of the Section 800 Panel by the DUSD(AR). Chief among these were recommendations concerning the procurement of commercial items and the establishment of a Simplified Acquisition Threshold. The legislative proposals were reviewed and combined with the National Performance Review initiatives for acquisition reform and combined into a single administration proposal for acquisition reform. In October 1993, the President and Vice President announced major initiatives on procurement as part of the National Performance Review. In addition, they enclosed congressional efforts to reform legislation governing the acquisition process.

PROCESS ACTION TEAMS

As discussed above, the use of Process Action Teams (PATs) is essential to achieving acquisition reform within DoD. Two PATs were formed in 1993. These PATs were chartered to address

issues related to Electronic Commerce/Electronic Data Interchange (EC/EDI) and military Specifications and Standards (SPECS & STANDARDS). The EC/EDI PAT looked at DoD's current EC capability in contracting and has made recommendations to reform the acquisition process to accommodate greater use of EC. The SPECS & STANDARDS PAT looked at how to implement the Deputy Secretary of Defense's direction that military-unique specifications and standards be prohibited unless they are the only practical alternative to ensure a product or service will meet user needs. The EC/EDI PAT has received final approval of its report, and the Department is beginning to implement the recommended changes. The SPECS & STANDARDS PAT has submitted its draft report to the Acquisition Reform Senior Steering Group for review and comment. That report will be finalized in early February 1994.

DEFENSE ACQUISITION PILOT PROGRAMS

The Secretary of Defense was authorized to conduct a Defense Acquisition Pilot Program in the Authorization Act for FY 1991. The purpose of this program is to determine the potential for increasing efficiency and effectiveness of the acquisition process through the use of innovative procedures and waivers of certain statutes and regulatory requirements. Seven acquisition programs were selected for inclusion in the Pilot Program. Those programs are: Fire Support Combined Arms Tactical Trainer (FSCATT); Joint Direct Attack Munition 1 (JDAM); Joint Primary Aircraft Training System (JPATS); Commercial Derivative Aircraft (CDA); Commercial Derivative Engine (CDE); Global Grid (an advanced technology demonstration); and certain medical, subsistence, and clothing product lines procured by the Defense Logistics Agency's Defense Personnel Support Center, Defense Logistics Agency. Each of these programs will demonstrate the use of commercial components which are procured using commercial practices. A legislative package to grant the statutory exemptions required to implement this program was prepared and submitted to Congress for action. Action to consider the Pilot Program package is expected in early 1994.

Conclusion

If DoD is to continue to become a world-class customer, reduce acquisition costs, foster the development of a national industrial base composed of companies that can compete in the global marketplace, and maintain its technological superiority, it must change the way it does business. Simplifying the acquisition process is the single most important step DoD, the Administration, and Congress can take to help defense contractors compete successfully in today's global marketplace. DoD must adopt the best practices of world-class customers; eliminate, to the maximum extent practicable, specifications, terms, and conditions unique to DoD; move away from broad reliance on buying defense-unique items from defense-only business units, while supporting those defense-unique entities necessary to maintain a required source of supply; and convert, to the maximum extent practicable, from a regulation based system to a market based system.

PERSONNEL

Introduction

In his State of the Union address, President Clinton promised, "As long as I am your president, our men and women in uniform will continue to be the best trained, the best prepared, the best equipped fighting force in the world." The American people and the American military have, after 40 years of effort, changed the world. They won the Cold War creating a new security era and in the Persian Gulf War proved themselves to be the best military force in the world today. DoD is committed to maintaining a quality force as it reassesses the security dangers that face America.

Reduced Force Structure and Manpower Levels

Cutting force structure — and the largely civilian infrastructure required to support those forces — is central to the Department's plan to maintain balance in defense posture. The FY 1994 budget accelerates planned force structure reductions. The Army will go from 24 divisions at the end of FY 1992 to 20 divisions by FY 1994 (12 active, 8 Reserve component). The Navy Ship Battle Forces will level off to 388 ships in FY 1994. Included in that figure is a reduction of 1 aircraft carrier, bringing the total to 12 aircraft carriers. The Marine Corps will maintain its three active and one Reserve divisions. By the end of FY 1994, the Air Force will have reduced to 13.7 Fighter Wing Equivalents (FWE) and 8.7 Reserve FWEs. There will be 191 bombers by the end of FY 1994. The Air Force will also reduce the number of intercontinental ballistic missiles (ICBMs) to 667 by the end of FY 1994. Other U.S. attack/fighter air forces will include 11 active and 2 Reserve Navy carrier wings, and the Marine Corps will have 3 active and 1 Reserve attack/fighter wings.

The President's budget request for active military, Selected Reserve, and civilian manpower for FY 1994 shows significant progress toward achieving the Total Force that will support reduced force structure. At the beginning of FY 1993, active duty military strength was at 1,705,000; by the end of FY 1994, active strength will decrease to 1,611,200. Selected Reserve end strength will be reduced to 1,024,800, and civilian employees will total 979,000 by the end of FY 1994.

The challenge is to build the right forces for the right mission. To maintain high personnel readiness levels, DoD intends to implement, monitor, and protect policies and programs that will: (1) attract talented, motivated young Americans into the armed forces, (2) train them rigorously, realistically, and often, and (3) treat them fairly, by providing for their health and welfare, and for that of their dependents.

Recruit Them

The first leg of the personnel readiness triad is attracting new recruits. The Department has been successful both in the number and quality of accessions. During FY 1993, 95 percent of new recruits were high school diploma graduates compared with an average 91 percent between

1980 and 1993. The same pattern exists in above average aptitude recruits — they comprised about 70 percent of FY 1993 intake, compared with an average of about 60 percent between 1980 and 1993.

Table III-1

Quality and Numbers of Enlisted Accessions — Active (Numbers in Thousands)						
FY 1993 Quality Indices			Accessions ¹			
Component/ Service	Percent High School Diploma Graduates	Percent Above Average Aptitude AFQT I-III A	FY 1993 Objectives	FY 1993 Achieved	FY 1994 Planned ²	FY 1995 Planned ²
Army	95	70	76.9	77.6	69.3	70.1
Navy	94	70	63.1	63.1	56.5	56.9
Marine Corps	97	68	34.8	34.8	31.1	34.3
Air Force	99	80	31.5	31.5	30.1	31.6
TOTAL	95	71	206.3	207.0	187.5	192.9

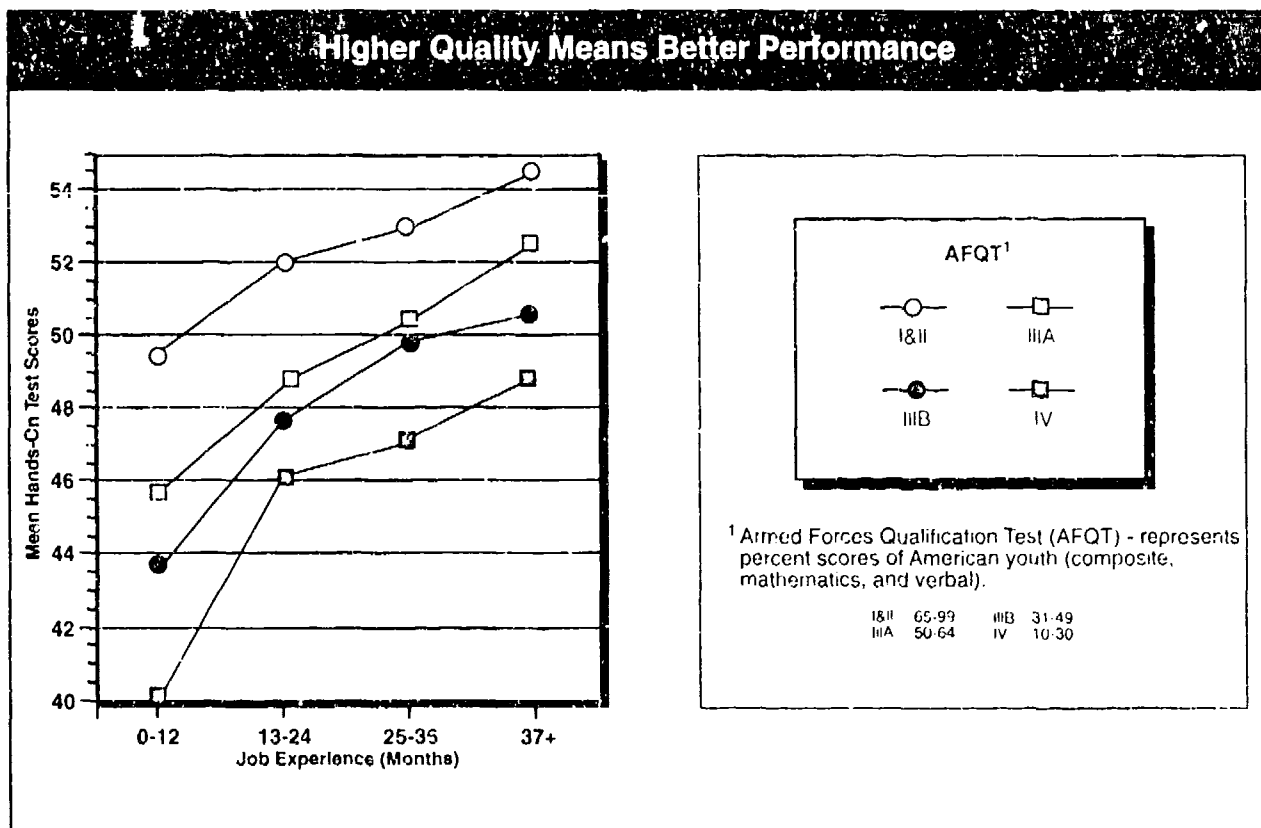
¹ Includes prior service accessions.
² Based on DoD budget plans for FY 1994-95

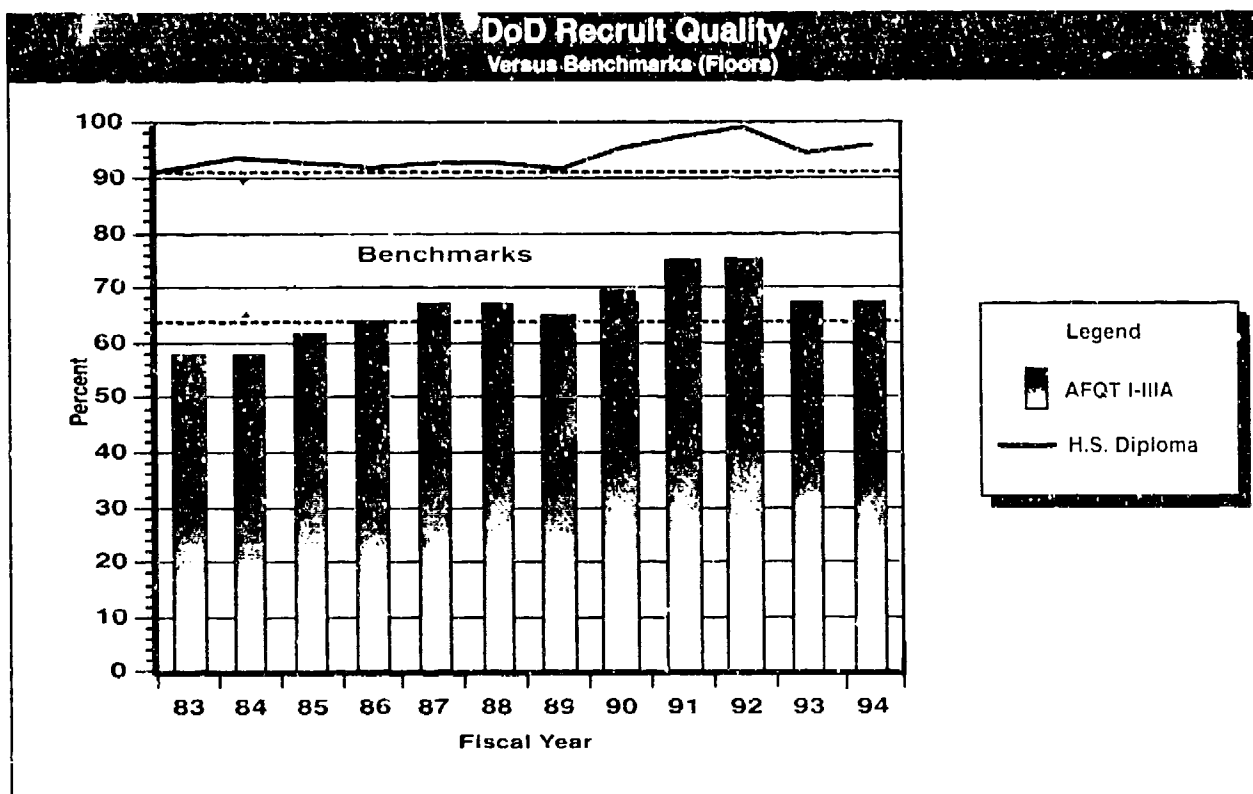
Table III-2

Quality and Numbers of Enlisted Accessions — Selected Reserve (Numbers in Thousands)						
FY 1993 Quality Indices Non-Prior Service (NPS)			Total Accessions Non-Prior and Prior Service (PS)			
Component/ Service	Percent High School Diploma Graduates (NPS)	Percent Above Average Aptitude AFQT I-III A (NPS)	FY 1993 Objective	FY 1993 Actual ¹	FY 1994 Planned ²	FY 1995 Planned ²
Army National Guard	85	61	68.2	67.2	76.6	62.7
Army Reserve	95	74	50.6	49.4	53.8	49.0
Naval Reserve	94	63	22.1	26.4	18.2	14.1
Marine Corps Reserve	98	80	10.2	8.2	8.9	15.3
Air National Guard	94	81	9.2	8.2	10.9	9.3
Air Force Reserve	95	81	9.0	8.8	9.2	8.5
TOTAL	91	68	169.3	168.2	177.6	159.4

¹ Reserve Component Consolidated Personnel Data System
² FY 1995 budget estimates

High-quality recruits are a cost-effective investment and absolutely essential to the readiness of the Military Services. Research has shown that about 80 percent of high school graduates will complete their initial three year obligation, while only half of the nongraduates will make it. High school diploma graduates also have fewer disciplinary problems. In addition, higher aptitude recruits learn faster and perform better on the job than their lower aptitude peers (see related chart). Lower numbers of high school graduates will require more accessions to replace higher attrition, consequently driving up recruiting costs. Resources allocated to recruiting must be sufficient to keep military recruits above 90 percent high school diploma graduates and 60 percent high-aptitude (Category I-III A) recruits (the recruit quality floor). As indicated in the next chart, the past four years have been the best in recruiting history and remain above the quality benchmark; however, sustaining the quality is becoming more of a challenge as recruiters must battle both a declining propensity of American youth to enlist in the armed forces and a growing perception that military service is no longer a secure or desirable option.





RECRUITING IN THE SELECTED RESERVE

Although the Reserve components are either downsizing or remaining at relatively level manpower strengths, an effective recruiting program is necessary for a balanced force. While all the Reserve components remain optimistic concerning their ability to maintain a steady flow of accessions — both with and without prior service — to fill critical skills and to maintain required grade distribution, turbulence associated with downsizing and restructuring offers new challenges and opportunities. While the military is recruiting for fewer positions, many of these positions are hard-to-fill, critical skills.

The Reserve components are placing increased emphasis on the recruitment of prior-service personnel to minimize training requirements and to capture Active component experience during the force drawdown period. Since Reserve component recruiting must necessarily focus on units and skills within specific geographic areas, matching skills and grades to accommodate unit needs remains a significant recruiting challenge. The quality of enlisted accessions remains high. Incentive programs, such as targeted bonuses and the Montgomery G.I. Bill, remain essential to the success of Reserve component manpower programs.

FULL-TIME SUPPORT TO THE RESERVE COMPONENTS

There are four categories of full time support personnel in the Reserve components. These categories are Active Guard/Reserve; military technicians; Active component members who are

assigned to support Reserve component organizations; and federal civil service personnel. Table III-3 displays the strengths of full-time support personnel.

Table III-3 Full-Time Support Personnel ^a (End Strength)				
	Actual FY 1992	Estimate FY 1993	Estimate FY 1994	Planned FY 1995
Army National Guard	55,671	52,318	52,006	51,282
Army Reserve	22,595	22,119	22,563	21,795
Naval Reserve	22,925	26,657	22,706	22,881
Marine Corps Reserve	7,389	7,070	6,508	6,468
Air National Guard	36,578	37,527	36,416	36,057
Air Force Reserve	16,319	15,854	17,576	17,751
TOTAL	161,477	161,545	157,775	156,234
^a Includes active Guard and Reserve, military technicians, Active component, and civil service personnel.				

Full-time support personnel provide the essential foundation for Reserve component unit readiness. Full-time support personnel assist in organizing, administering, recruiting, retaining, instructing, and training the Reserve components. Increased mission responsibility continues to be placed on the National Guard and Reserve components. Since training time of part-time members of the Guard and Reserve is limited, it is imperative that there are sufficient numbers of qualified full-time personnel to ensure that available training time is used effectively and that the sophisticated equipment in today's National Guard and Reserve units is maintained properly. The Department is currently developing more detailed policies to improve the quality and utility of full-time support to Reserve component units and activities.

RETENTION AND SEPARATION

During the draft era, the Department reenlisted one in five of its first-term enlisted members. By the late 1970s, that rate had improved to one out of every three first-termers reenlisting. By the early 1980s, these reenlistment rates stabilized at about one out of two, where it remains today. This translates into a much more experienced force than existed in the early 1970s. This increased retention is valuable; it provides more experienced supervisors and leaders while improving the return on training investment. It also helps demonstrate a commitment by the Services to take care of their own — to treat people right.

Active military strength has decreased nearly 470,000 — from 2,174,000 in FY 1987 to 1,705,000 at the end of FY 1993. While some additional strength reductions are planned, the

Department remains committed to achieving them on a voluntary basis to the maximum extent possible. In fact, more than 95 percent of the drawdown is being accomplished through attrition, reduced accessions, and voluntary separation incentive programs — the Voluntary Separation Incentive (VSI), the Special Separation Benefit (SSB), and the Temporary Early Retirement Authority (TERA). As in the past, involuntary separations such as Reduction in Force (RIF) and mandatory early retirement actions will be taken only as a last resort.

Two trends are emerging from the drawdown: losses are occurring early, and they are voluntary. During FY 1992 and 1993, 60 percent of all service losses had fewer than six years of service; almost 80,000 career members separated voluntarily under VSI, SSB, or TERA; and over half of the more than 90,000 retirements occurred within the individual's first year of eligibility. As a result, DoD has been able to maintain reasonable promotion flows, avoid involuntary separation actions to the maximum extent possible, and demonstrate a continuing commitment to treat people fairly — both those who stay and those who leave.

DoD's civilian work force began the drawdown in 1989 with over 1,117,000 civilian employees. By September 30, 1999, there will be fewer than 800,000 civilians. The Department is developing a strategy to adjust civilian reductions with changes in military force structure to achieve the most efficient, cost-effective work force mix. In achieving the necessary reductions, DoD also intends to minimize layoffs, assist laid-off employees, and achieve work force balance.

Last year Congress authorized the Department to use separation pay to avoid involuntary separations of civilian employees. The Department has used these incentives extensively, with positive results. During FY 1993, civilian strength came down about 70,000, significantly minimizing the need for involuntary separations. For example, using incentives, the Air Force and Army Materiel Commands avoided RIFs at most locations, and naval shipyards and aviation depots significantly reduced the number of employees scheduled for involuntary separation. Because of these incentives, reductions have come without a disproportionate impact on women and minorities. The DoD approach has been adopted by other agencies and is the basis for the Administration's proposal for a government-wide incentive program.

The Department has issued policy guidance for the transition initiatives for the Selected Reserve contained in the National Defense Authorization Act for FY 1993. This guidance ensures that Selected Reservists who are involuntarily separated during the force drawdown period are treated fairly and equitably for their service. These enacted initiatives include: (1) special separation pay for personnel with 20 or more years of service, (2) early qualification for retired pay at age 60 for those with 15 to 20 years of service, (3) separation pay for those with 6 to 15 years of service, (4) post-separation use of commissary and exchange privileges, (5) continuation of the Montgomery G.I. Bill educational assistance, and (6) priority affiliation with other Selected Reserve units for those Reservists involuntarily separated short of a full career.

These programs are helping Reservists whose billets or units are inactivated as well as those who are transferred to the Retired Reserve as the result of program: designed to balance and shape Reserve forces of the future. In addition, use of active duty voluntary incentives — TERA, VSI, and SSB — has been approved where needed to assist National Guardsmen and Reservists serving on full-time duty in support of the Guard and Reserve. These benefits and incentives,

together with a more gradual reduction in Reserve forces, will help the Department treat Reservists fairly, while ensuring the smaller Reserve force includes the proper balance of age, grade, skills, and experience

Train Them

In order for military units to be mission ready, the individuals within those units must perform their jobs proficiently. The Department continues to identify ways to enhance individual skill performance and to explore alternative ways to meet occupational training requirements. To improve the efficiency and effectiveness of individual training, as well as achieve budget savings, DoD is making better use of training facilities, improving training technology, consolidating training courses, and investigating new ways to deliver training. The Chairman of the Joint Chiefs of Staff Report on Roles and Missions, as well as the Military Training Structure Review, will result in further consolidations of training. At the same time, care is required to avoid shifting training to operational units when such training would be more efficiently and effectively provided by training institutions established for that purpose.

COMMITMENT TO INDIVIDUAL TRAINING

Individual training provided to servicemembers is one of the cornerstones to preserving American defense capabilities. The readiness of Active and Reserve forces is directly dependent upon the individual performance of servicemembers, and training allows the military to achieve and maintain the highest levels of performance. Military personnel become qualified for and progress in their occupations through individual training. The Department's commitment to maintaining high standards of training and recruiting high-quality personnel will continue the success of the volunteer force. Training programs and resources were a major part of the Bottom-Up Review, which carefully looked at individual training resources in each of the Military Services, and will continue to receive high-priority management attention.

INDIVIDUAL TRAINING RESOURCES — FY 1995 BUDGET

Training resources have been maintained at a level consistent with DoD's adjusted force structure. The FY 1995 budget includes the essential Operations and Maintenance (O&M) resources needed to support critical individual training programs. This level of resources avoids shifting training missions to operational units and prevents the hollow force of the 1970s, when the scarcity of training resources adversely affected military readiness and morale.

CURRENT PROGRAMS TO IMPROVE TRAINING

The Department is continuing to emphasize improvements and efficiencies. The Joint Staff is working with the Services to conduct a comprehensive review of all training courses in order to achieve further consolidation. In order to improve the portability of course development software and reduce costs, the Department is giving additional emphasis to setting standards for computer-based training and distance learning. Low-cost applications of advanced training technology are currently being tested and implemented to assist both active and reserve units.

The most ambitious joint effort to date is the ongoing acquisition of a Joint Primary Aircraft Training System (JPATS) as the entry-level trainer aircraft for both the Navy and Air Force.

CAREER FORCE TRAINING

Experienced personnel represent a significant investment of resources and effort, particularly as the force drawdown continues. For that reason, the Department is placing increased emphasis on preserving and upgrading the skills of career members. Professional and advanced training for officers and enlisted personnel prepares them to handle the more complex challenges associated with a smaller force which operates more technical systems and manages scarce resources. In addition, there has been an increase in joint training requirements to improve and support joint military operations and planning. Improving technical expertise, developing management and leadership skills, and supporting joint training will continue to receive a high level of attention.

Treat Them Fairly

Finally, the third leg of the readiness triad — treating people fairly. The Department is working hard to demonstrate (both in word and actions) a genuine concern for the well being of its personnel (military and civilian) — those remaining in the Services and those leaving. This affects not only readiness but also future recruiting. People serving in the military accept dangerous duty, frequent relocations, and extended periods of family separation as a necessary condition of service. While they pursue this noble profession of arms with pride, they need to be reassured that the nation appreciates and values their contributions and sacrifices. The Department is committed to providing a supportive environment to its people to ensure fair compensation, a decent quality of life, and career system that encourages retention.

HEALTH CARE

The Department of Defense has a dual health care mission — to provide medical services and support to the armed forces during military operations, and to provide continual medical services and support to members of the armed forces, their family members, and others entitled to DoD medical care. There are 8.2 million beneficiaries who are eligible to receive health care from the Military Health Services System. Direct care is delivered worldwide in 140 hospitals. Care is also purchased from the civilian sector under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) for eligible beneficiaries. Substantial resources are required to accomplish the DoD medical mission. The Department's medical portion of the President's FY 1994 budget approximates \$15.1 billion.

The Department is planning to meet the challenge of bringing military health care into harmony with national health care reform. The three key elements of the Department's plan are readiness, security, and choice. In support of the primary mission of readiness, military hospitals and clinics will continue to be operated, staffed, and managed by uniformed health care providers. There will be no change in health care for active-duty personnel, nor will military health care overseas be affected. The plan offers the Department an opportunity to give family members and retirees more secure access to, and more choice about, health care providers. They would

have the choice of three options: (1) they may enroll in the military health care plan, known as TRICARE; (2) they may elect to participate in a private sector fee-for-service plan; or (3) they may join in a civilian preferred-provider option and get health care through a network of carefully selected civilian providers.

Until the Department is ready to implement this plan, the current military health care options will stay in place. The Department will continue to engage and consult with the Services, Joint Chiefs of Staff, and appropriate committees of Congress to develop and implement the specific elements of these changes to the military health care system.

Medical Readiness

Medical readiness support of national security objectives has expanded military medical operations beyond DoD's wartime response role. The Department's ability to rapidly transport medical capability and to intricately plan and execute medical operations in the face of devastation and destruction has led to greater involvement in disaster relief, humanitarian assistance, and peacekeeping operations.

Medical support provided by DoD to domestic activities includes the assistance provided to the Midwest flood relief efforts and the continued support given to Hurricane Andrew recovery initiatives. In connection with U.N. initiatives, U.S. military medical capabilities were deployed as major medical elements of peacekeeping and humanitarian assistance forces. In Croatia, the Department is providing a military hospital to support the U.N. peacekeeping forces and to treat severely wounded children. In Somalia, DoD medical services are supporting both humanitarian and peacekeeping forces. These are not new roles for the U.S. military medical community, which has a long tradition of civic action to countries throughout the world. Additionally, medical support provided as part of security assistance programs continues to provide medical material and training to many nations.

Managed Care

During the past year, substantial progress has been made toward systemic integration of direct care capability and CHAMPUS through managed care initiatives. The Department is implementing a regional health care delivery concept developed from the most effective features of DoD's managed care demonstration projects such as the Catchment Area Management (CAM) program and the CHAMPUS Reform Initiative (CRI). This comprehensive managed care approach for DoD health services will be accomplished through a nationwide system of regional arrangements centered on 12 military medical centers designated as regional lead agents, with responsibility and accountability for managing health services within their region.

Under the regional lead agent system, the Department will, for the first time, allocate resources based on a modified capitation strategy. Under a capitation financing system, resources are allocated based on responsibility to provide health services to a defined population for a fixed funding amount per user of services. Capitation financing is a strategy for containing the cost of health care. It will restructure incentives for delivering DoD health care by encouraging beneficiary wellness and cost-effective approaches such as use of preventive services and providing care in the most cost-effective settings.

The health service regions will be supported by managed care support contracts that supplement and extend the services provided by military medical facilities. This will enable these regional managed care plans to offer comprehensive health services to military treatment facility catchment areas and selected geographic locations not served by a military hospital, including areas affected by base realignment and closure actions.

QUALITY OF LIFE

Personnel Tempo

As the total force downsizes, sacrifice and readiness must be balanced. Too great a deployment tempo means real sacrifice to military families. At the same time, readiness must be achieved, frequently by trying to do more with less. America's economic strength requires an efficient national defense program, but precautions should be taken not to weigh too heavily on those who provide that defense.

When operating tempo (OPTEMPO) is increased significantly, personnel can be stretched too thin. The all-volunteer force expects and is entitled to a decent quality of life in return for its dedicated service to the nation. Experience shows that when servicemembers are deployed for long periods of time, personal problems and family conflicts begin to reduce their effectiveness. For that reason, personnel tempo goals must contribute to high morale. Today, these goals are stretched to the limits — sometimes exceeding them. Keeping personnel deployed away from their families more during peacetime than during the height of the Cold War denies the peace dividend to those who worked hardest to earn it. Balancing training and operational requirements with deployment tempo is essential if the Department is to recruit and retain quality people. It is also essential that quality of life benefits be upheld so that the morale of DoD's people — its most precious commodity — does not decline.

FAMILY

Quality of life is difficult to measure; yet without a doubt, the impact of a good quality of life contributes to an intangible product — a motivated, satisfied force. This is the essence of a ready force. As the Department evolves to a predominantly married career force, family issues play an increasingly important role in military planning. Over 60 percent of the total force has family responsibilities. Families are an important part of the readiness equation and must be considered in planning for successful operations and deployments. Therefore, the Department will continue to sustain and develop a family support structure designed to meet the challenges of short-fuse deployments, like Somalia. Additionally, there are a host of support activities designed to support the servicemember(s) and their families. Listed below are a representative sample of these support activities:

- **Family Advocacy Programs.** These programs respond to family dysfunctions. Child and spouse abuse prevention, intervention, and treatment programs in the military remain on the cutting edge of excellence.
- **Child Development Programs.** Child care is unquestionably a priority for the majority of families. Most military families rely on Child

Development Programs to sustain the economic strength of the family. Child care development centers are offered on 400 installations and provide over 166,000 child care spaces. This is an increase of approximately 16,000 spaces compared to last year. Resources will be added to increase the availability of child care. A target of 208,000 child care spaces is planned for FY 1995. DoD continues to improve the quality and availability of care. Long-range plans call for increased availability of services by 10 percent per year over the next five years.

- **Department of Defense Dependent Schools.** The overseas dependents' schools are a major contributor to the quality of life of servicemembers and their families stationed overseas. In this important area, the Department seeks to ensure that children's education is not impacted by the drawdown. High quality education must be sustained throughout the transition. Schools are the cornerstone of the American community and every effort will be made to keep school environments stable until the drawdown is completed and school populations and locations are finalized.
- **Morale, Welfare, and Recreation (MWR) Programs, Exchange, and Commissary.** These activities represent three of the most important nonpay benefits provided to military members and their families. The Department realigned the proponent for exchanges and commissaries, along with MWR and other quality of life programs under the Under Secretary of Defense for Personnel and Readiness. These programs allow military families to expand their buying power in commissaries and exchanges. At the same time, profits from exchanges are disbursed to other MWR programs on military installations. This complements the appropriated funds provided for MWR to afford servicemembers and their families MWR programs comparable to those offered in communities throughout the United States.

Conclusion

As the total force drawdown progresses, the Department will continue to ensure that the remaining force is fully manned, trained, and ready for any contingency. The complex transition to a smaller force must be accomplished without sacrificing readiness and quality of personnel and the corresponding support they require. Key to assisting the Department in accomplishing this task will be deliberate efforts designed to ensure the temporary turbulence created by downsizing the force is not too much, too soon. Continuing to recruit quality people, providing them with challenging, realistic training, and treating them fairly will result in a military force that is prepared to quickly respond and meet any threat around the world.

Defense Resources

Part IV

INFRASTRUCTURE AND LOGISTICS

Introduction

Prudently managing infrastructure and logistics is a major and continuing effort in the new security era. As the forces shrink, so must the infrastructure and logistics behind the forces shrink. Otherwise an increasing proportion of the nation's defense effort will be consumed by overhead activities and less will be available to the operating forces. Every dollar, every person — military or civilian — that goes into unneeded overhead activities is one less available for the real business of the Department — fielding ready and capable forces that can deter and win wars.

On the other hand overhead activities provide crucial services and support to the operating forces, support that, if removed or impaired, would damage readiness. Clearly, a balance is needed. The Department therefore conducted a major review of infrastructure and logistics as part of the Bottom-Up Review. The purpose of this review was as follows:

- To eliminate excess capacity;
- To close down unneeded activities;
- To find more efficient ways of doing business; and
- To accomplish all this without impairing readiness or sacrificing core activities.

The Department's means for accomplishing these goals fall into three broad categories:

- Consolidation — the merging of previously separate activities, thereby eliminating unused capacity and reducing overhead through economies of scale.
- Privatization — the transfer of government activities to the private sector, thereby reaping benefits from competition and the more flexible operations of private industry.
- Better business practices — using more efficient management processes, organizations and techniques, often acquired from the private sector.

The results of these efforts are producing major savings, as described below.

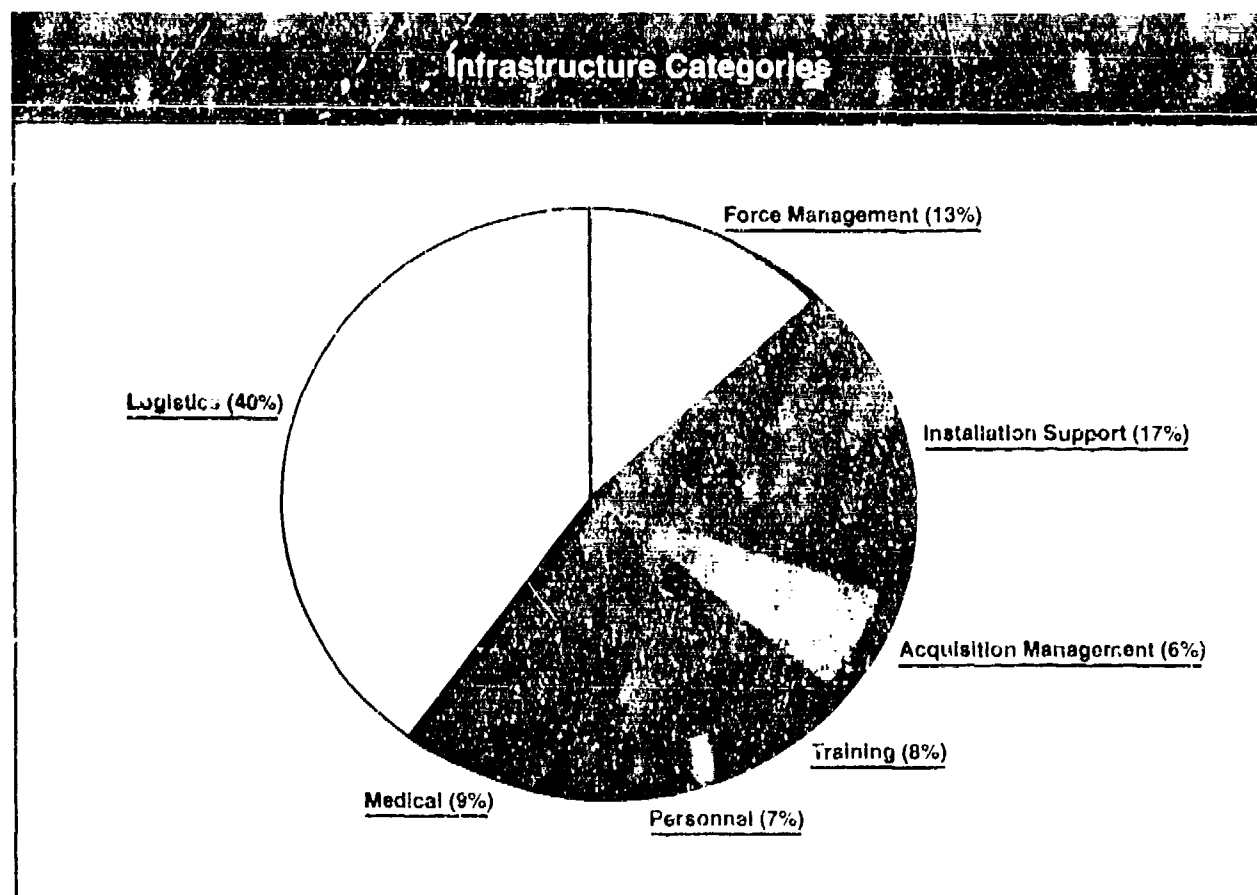
What is Infrastructure and Logistics

In order to be comprehensive and systematic, the Bottom-Up Review took a very broad view of infrastructure and logistics by including everything that was not part of the operating forces. Only intelligence, which was covered by a separate review, was excluded. These activities together comprise a large part of the defense program, accounting for \$160 billion in Fiscal Year (FY) 1994, 59 percent of the total defense budget.

However, infrastructure and logistics are not homogeneous, but consist of many different kinds of activities. The Bottom-Up Review divided these activities into eight categories, as follows:

- Central logistics;
- Central medical;
- Central personnel;
- Central training;
- Acquisition management;
- Installation support;
- Command, control, and communications; and
- Force management.

The accompanying chart shows their relative size.



The Department assembled eight interagency teams to study these categories. Each team looked at its area in depth. Reviews and analysis continued through the fall in an effort to be comprehensive and thorough.

Achieving reductions is not easy. Only a part of infrastructure and logistics will decline automatically with reductions in forces. Some parts are tied to activities external to the Department while other parts are driven by statute, policy, or management philosophy. These latter two categories can only be reduced by making explicit management decisions. Described below are the results and initiatives in the areas of force management, central logistics, and installations support. The other areas mentioned above are covered elsewhere in this report.

Force Management

Force Management includes various headquarters and defense agencies. These headquarters organizations provide guidance and direction to either the Department as a whole or to multi-Service organizations. The defense agencies are centralized organizations that provide a particular type of function or service to all elements of the Department. The Department's policy is that these headquarters and defense agency activities should shrink as the activities they support shrink.

To ensure this, the Department instituted a Defense Agency Review as part of the Bottom-Up Review and as a follow-on to the overall infrastructure study. This Defense Agency Review looked at all the centrally operated defense activities, agencies as well as headquarters. The panel reviewed manpower trends and changing missions in order to align the size of these activities with the new security environment. The result of this review is a directive to shrink the civilian work force in these activities by 18 percent from FY 1994 to FY 1999. This reduction will bring the agencies in line with reductions in the Services.

Central Logistics

MANAGING DISTRIBUTION AND INVENTORIES

The Department manages millions of items to sustain its weapon systems, support equipment and facilities. It maintains extensive inventories in a network of supply depots. The management challenge for materiel management and distribution functions is to maintain or improve levels of support to military customers while radically reducing the structure and overhead associated with delivering that support. In making management improvements, the Department will not lose sight of the prime reason for having a distribution system - to give military combat units the equipment and support services they need when they need them.

The Department's initial efforts focus on the following:

- Reducing excess capacity remaining in the distribution system after the Cold War. Base Realignment and Closure (BRAC) efforts have provided an effective process to reduce this excess distribution system capacity. Five distribution depots were designated for closure through the 1991 and 1993 BRAC processes. Planning for BRAC 1995 has included distribution depots as primary candidates for further downsizing. This will rightsize the storage needs of the Department and contribute to more efficient materiel distribution operations.

- Disposal of materials no longer required. The Department has been pursuing an aggressive inventory reduction program since 1990 and has already reduced inventories from \$102 billion to \$80 billion through FY 1992. Current projections for value of inventory reductions are \$2 billion in current dollars by next year. This reduction results in inventory levels of \$69.3 billion in 1995; by 1997 the inventory should be down to \$64.0 billion in then-year dollars. Disposal actions have also increased substantially. The total value of items declared excess has increased from \$10.8 billion in FY 1991 to \$20.3 billion in FY 1992, the last year for which statistics are available.
- Improving visibility and control over items in the distribution system. The Department of Defense (DoD) Total Asset Visibility Initiative is designed to link the Department's many logistics systems and will provide the management information and decision support capabilities required to more effectively and efficiently manage assets in storage, transit, maintenance, and procurement. Readiness will improve and inventories decline as a result of better utilization of existing assets. Procurements and maintenance repair actions will decline as excess assets are fully taken into account in the requirements processes. Visibility of property inside shipping containers and in the transportation pipeline will help alleviate backlog problems at ports and reduce duplicate orders.
- Implementing the best commercial practices from private sector logistics companies and taking advantage of the opportunities that technological advances present. The Department is examining private sector models not only to improve asset visibility and reduce inventories, as described above, but also to provide quicker response for contingency support. One means of doing this is by making more direct deliveries of consumable items from vendors to customers. For example, DoD is implementing a joint demonstration project of expanded use of commercial distributors for peacetime troop feeding within the continental United States.

The Department is also increasing the degree to which it buys standard commercial parts, instead of military specification parts — another way to reduce inventory while maintaining readiness. As noted in the segment of this report dealing with Acquisition Reform, the Department is committed to maximizing the use of best commercial practices, including pursuit of several procurement reform initiatives under the National Performance Review in order to support the warfighter at least cost to the taxpayer.

To wrap all these initiatives together, the Department is developing a logistics strategic plan. This plan will produce a road map for providing more flexible, responsive and reliable support to operating forces. The plan is being developed by a DoD wide group chaired by the Deputy Under Secretary of Defense (Logistics). Priorities identified in the plan will be reflected in future budgets.

DEPOT MAINTENANCE

Requirements

The Department possesses an extensive network of maintenance depots operated by the individual services. These depots are industrial facilities that overhaul and repair major end items (weapons systems, vehicles, etc.) and components, perform equipment modifications, and renovate ammunition. After considerable study, the Department has concluded that there is too much organic depot maintenance capacity. This has occurred for two reasons. First, the easing of geopolitical tensions has allowed reductions in force structure which have, in turn, reduced depot maintenance needs for normal peacetime operations and for projected wartime requirements. Second, the recent changes in planning from preparation for a large scale, possibly long term conflict to preparation for shorter duration contingency operations have reduced the requirement for depot maintenance infrastructure. The effect of these force structure and scenario-driven changes together has been to greatly reduce new depot maintenance requirements. The Department has closed several depot maintenance activities through the BRAC process and will close more in BRAC 1995.

Workload Competitions

Public-private competitions for depot maintenance work have achieved some beneficial results and have driven efficiencies that might not otherwise have been realized. The organic activities that have competed are, today, more efficient than before the competition program was initiated. Work specifications were simplified and the pressures of competition motivated competitors to seek improved processes and methods to reduce overhead. Furthermore, contracting out work turns fixed costs into variable costs. However, there are important differences between government and private industry. Consequently, the Department is conducting a major study to improve its ability to compare the two sectors in head-to-head competitions. This study, carried out by a major accounting firm, will accomplish the following: (1) determine whether the DoD accounting systems provide all relevant costs for competitions, and (2) propose needed improvements to ensure that competition procedures are fair to both government depots and private contractors.

In the future, however, the Department plans to focus the resources of organic depots on the accomplishment of work required to preserve core capabilities. Core capabilities represent the minimum level of depot maintenance skills and facilities that must be maintained as publicly-owned operations in order to meet contingency requirements. As the Department further downsizes the depot maintenance infrastructure, its Centers of Technical Excellence will increasingly be relied upon to accomplish work needed to maintain core capability. More of the remainder of the Department's depot maintenance work will be available for private sector competition.

Weapon Systems Support

Although there will continue to be new weapon systems introduced into the inventory, the average age of weapon systems will still tend to increase because of the declining numbers

of new systems purchased. These aging systems will require increased levels of modernization and maintenance, which underscores the importance of maintaining a viable depot maintenance system even in the face of force level reductions.

Management of DoD Depot Maintenance Activities

In order to pursue reductions in excess depot capacity most effectively, the Department evaluated various options for managing and coordinating depot maintenance operations. The evaluation considered all options that appeared to be satisfactory in terms of military responsiveness, efficiency, authority and responsibility, and potential support to the BRAC efforts. Formal evaluation of the options by representatives of the Services, Joint Staff, and OSD resulted in a very clear preference for the existing Defense Depot Maintenance Council (DDMC).

This council is chaired by the Deputy Under Secretary of Defense for Logistics and includes members from all the Services, the Defense Logistics Agency and the Joint Staff. The DDMC is the best management structure for managing and coordinating DoD's depot maintenance operations. It uses elements that are already in place for its implementation, are the least disruptive, and create no additional bureaucracy. More importantly, the DDMC allows for continued decentralized operational control of actual depot maintenance. The interface that currently exists between the Service warfighters and their depot maintenance community therefore remains intact.

The National Defense Authorization Act of FY 1994 requires the Secretary of Defense to appoint a task force to assess the overall performance and management of depot level activities. This task force is currently being formed. By April 1, 1994, the Secretary of Defense will transmit to Congressional defense committees the results of the task force's assessment and recommendations for legislative and administrative action.

TRANSPORTATION

Transportation is one of the major functions of the DoD logistics system and constitutes a significant portion of the system's total cost. In FY 1993 DoD's worldwide transportation program cost more than \$10 billion. This program supported the movement of material, personnel, personal property, and the maintenance of transportation infrastructure services. Ongoing initiatives are achieving savings by reducing transportation costs, improving transit times, and providing for more efficient administration of transportation functions.

A major transportation initiative is to achieve better visibility of material in transit. This means knowing where items are at all times as they move from the factory or depot to the ultimate user. Improving In-Transit Visibility (ITV) translates into reduced procurements and smaller stocks by reducing reorders and facilitating prompt deliveries. Reduced procurements and smaller stocks will result in significant cost savings, but will place greater demands on the transportation system for accurate and timely shipments. Building a unified, common-user ITV system that reaches from the depot and vendor to the foxhole is one of the Department's highest ongoing logistics priorities.

Other transportation efforts that promise significant cost avoidances are the Joint Transportation Corporate Information Management Center (JTCC) and the Defense Transportation Electronic

Data Interchange (EDI) initiatives. The emerging JTCC will integrate existing transportation systems more effectively and will ensure that duplication in existing and future systems is avoided. The Defense Transportation EDI initiatives will reduce the manpower, time and paperflow currently required for acquisition of and payment for transportation services.

LOGISTICS BUSINESS SYSTEMS MODERNIZATION

The Logistics Corporate Information Management (CIM) initiative is under way to improve operations in materiel management, depot maintenance, materiel distribution and transportation. In the past, the development, modification, and fielding of automated logistics information systems were left in the hands of the components. As a result the Department presently has at least five different approaches to providing logistics support, and these five approaches have produced over 200 major mainframe software applications, many duplicative and most incompatible with each other.

The Logistics CIM initiative was launched to standardize data and processes across all components and to improve logistics practices by adopting the best commercial practices and using private sector expertise wherever possible. This corporate approach will provide a major enhancement to the Department's operating efficiency and to the responsiveness of its support to the operating forces. There are four areas of Logistics CIM involvement: materiel management, depot maintenance, distribution, and transportation (described above).

Implementation of a standard materiel management system will make the process of inventory control, requirements determination, order processing, reparables management and technical support uniform DoD-wide. Fielding a standard system will result in phasing out approximately 150 legacy applications. For a 5-year investment of about \$1 billion, estimated savings total some \$5 billion through FY 2005.

Depot maintenance functions include project management for end item repair, production management for reparables repair, hazardous materiel management, and tool control. Implementation of a standard system for these activities will phase out approximately 100 legacy systems. For a 5 year investment of approximately \$600 million, estimated savings total almost \$2 billion through FY 2005.

Distribution depots receive, store, and issue DoD assets. A standard system will be fully implemented during FY 1994-96 and will phase out six legacy applications. For a 5-year investment of about \$140 million, savings of approximately \$500 million will be realized by FY 1999.

Installations Support

THE CRITICAL MANAGEMENT CHALLENGE

By 1997, the Department of Defense will shrink to its smallest size in terms of manpower since the late 1940s. Therefore, reducing the size and cost of the base structure is critical to

maintaining a balanced and affordable defense program. Military bases support the fighting forces, and quality facilities are essential to combat readiness. Balancing these demands is a major management challenge.

This challenge takes place in an environment of severely constrained resources. Over the past five years, installation support resources were reduced even faster than force structure. Force structure is down by approximately 20 percent; installation support is down by about 39 percent. Installation support funding through FY 2000 is expected to be roughly 50 percent less than the FY 1987 funding level. Reductions of that magnitude require fundamental changes in the way DoD accomplishes its mission and operates its bases.

To meet this management challenge, the Department is pursuing a broad installations effort. This strategy has six goals:

- To improve installation management;
- To meet facility requirements at the lowest possible cost;
- To provide a high quality of life for service members;
- To optimize base utilization;
- To improve energy resource management; and
- To conduct the Department's operations in an environmentally sound manner.

The Department's plans for achieving these goals are described below.

INSTALLATIONS MANAGEMENT

To continue to provide strong mission support in a resource constrained environment, the Department must manage its facility resources wisely. A critical component of this effort is a policy of providing installation commanders greater flexibility, improved communication, and better training and education.

The Department is encouraging the broad authority concept for installation commanders that is part of DoD Directive 4001.1. This Directive delegates to installation commanders broad authority to determine the best means of accomplishing the mission and holds them accountable for the final results as well as resource consumption. The Department also provides incentives to installations to operate more efficiently.

In order to improve the management of its facilities, DoD is encouraging personnel to communicate their ideas and concerns through commanders conferences, training programs, and existing publications. Through these communication channels, the Department is identifying innovative solutions to particular problems. For example, DoD, as the largest, centrally managed energy user in the United States, has recognized the importance of energy conservation. Recently, DoD began publishing *Energy Matters*, a newsletter that highlights

energy legislation, DoD energy programs, installation success stories, and news about energy-efficient products.

In addition, the Department will seek greater management efficiencies within and between bases and installations. Such techniques as streamlining, eliminating unneeded layers of management, employment of newer technology, relying more on competition, automating more work, and continually improving work processes will be used to reduce costs.

Finally, the Department has developed a set of principles to help commanders improve management at their installations. These principles, articulated in the Bottom-Up Review, include the following:

- Changing policies that inhibit prudent management;
- Practicing good business sense including reliance on the private and non-DoD public sectors, where appropriate; and
- Providing incentives to commanders to obtain efficiencies.

With these new management principles, commanders will be able to operate installations more efficiently. This will institutionalize an improved management approach at DoD's 422 major domestic installations.

FACILITY REQUIREMENTS

DoD's base structure comprises over 5,500 properties worldwide, includes more than 430,000 buildings, and occupies almost 27 million acres. There are 495 major bases in the Continental United States and approximately 1,650 sites overseas. The measure that is most commonly used to estimate maintenance, repair, and construction funding requirements for those structures is Plant Replacement Value (PRV). PRV is the estimated cost in current year dollars to replace the existing physical plant, using contemporary construction materials and technology. FY 1993 PRV was estimated to be approximately \$600 billion.

Of the many factors affecting how the Department funds installations in the coming years, BRAC will have the greatest impact. Base closure proposals from the 1988, 1991, and 1993 Base Realignment and Closures Commission will save roughly \$7 billion per year and decrease Plant Replacement Value by approximately 20 percent or \$120 billion, between FY 1993 and 1999. Even with these reductions, however, the Department will have more installations than it needs to support projected future force structure, planned operations, and training levels and other mission activities. The Department therefore will need to close more bases in order to provide adequate resources for the remaining base structure.

Historically, facility requirements have been significantly underfunded, thus adversely affecting readiness and increasing life-cycle costs. Under the Planning, Programming, and Budgeting System (PPBS), capital and operating budget requirements were analyzed independently, fund allocation decisions were shortsighted, and the focus was on minimizing annual budget costs and reducing outlays. To avoid this in the future, the Department is implementing a new corporate strategy, the life-cycle costing concept. Life cycle costs are the total costs of the facility over

its usable life. These costs include initial acquisition, operation and maintenance, repair or renovation, and final disposition. The life-cycle costing concept requires that capital costs, such as Military Construction and operating costs, such as those paid from the Real Property Maintenance Account, be considered together during the PPBS process. This longer-term, focused investment strategy will be more economical, promote readiness, and extend the life of facilities.

QUALITY OF LIFE

The Department is committed to maintaining a high quality of life for its 1.7 million servicemembers and 2.5 million family members. Defense installations are an important part of the quality of life by providing municipal, housing, and community facilities and services for servicemembers and their families. Investment in quality facilities is a tangible indication of commitment to providing adequate living and working conditions for DoD personnel and their families and affects pride, performance, and readiness.

DoD is working to maintain the high quality of services provided to military members and their families. Supporting a high quality of life includes a variety of actions: vigorous leadership to ensure quality living and working areas, standards for quality facilities and services, management tools to installation commanders to evaluate facilities and quality of service, and legislation that positively impacts quality of life. These actions are necessary to ensure that morale, retention, and readiness do not decline along with the downsizing of DoD installations.

BASE UTILIZATION

The Department is working to institute an integrated management approach to base utilization. In the past there was no mechanism to ensure bases were optimally used in terms of capacity and mission. The Department can no longer afford such inefficiency. Achieving optimum base utilization requires each installation to have a facilities master plan that reflects current and future use projections. Each Service and defense agency is now required to have a current installation master plan that articulates the linkage between force structure and installation requirements. OSD will have an integrated master plan that articulates the overall linkage between force structure and installation requirements.

Finally, the Department is taking steps to optimize use of the existing installation infrastructure. This effort includes the following measures:

- Ensuring installation commanders have the means and methods to develop current, relevant master plans for their installations;
- Ensuring the Department has a comprehensive process by which to analyze and monitor base utilization;
- Integrating the various functional reviews and roles and missions studies to ensure overall mission effectiveness and base utilization;
- Supporting the BRAC Commission decisions and process; and

- Allowing private industry to use excess capacity in DoD test and evaluation facilities on a favorable cost basis.

ENERGY RESOURCE MANAGEMENT

The Department is the largest, centrally managed energy user in the United States. The \$2.9 billion of installations energy used each year provides direct mission support; sustains industrial processes; and heats, cools, and lights the 2.4 billion square feet of DoD's 400,000 buildings and facilities. As such a large energy user, DoD cannot afford to waste limited energy resources.

Energy conservation requires increasing energy efficiency; it does not mean doing without energy. Energy conservation aims to reduce costs, improve environmental compliance, enhance workplace productivity and morale, and in the long run save money.

Two new initiatives, Energy 2005 and the National Energy Policy Act of 1992, are helping the Department make progress in improving energy management. Energy 2005, the Clinton administration's congressionally authorized program, provides renewed support and motivation for installation energy conservation efforts. Energy 2005 provides the resources to accomplish the administration's goals of energy and environmental stewardship, and allows the Services and defense agencies to retain two-thirds of their energy cost savings: one-half to use for new energy-saving efforts and one-half for discretionary use by the installation's commander. The goals of Energy 2005, as codified in the National Energy Policy Act of 1992, are as follows:

- To achieve a 10 percent reduction in installations energy use by FY 1995, and a 20 percent reduction by FY 2005, as compared with FY 1985 usage;
- To improve industrial energy use efficiency by 20 percent compared with FY 1985 usage; and
- To identify and implement by FY 2005 all energy and water conservation opportunities that provide a return on investment in 10 years or less.

Progress is already being made. The interim goals of a 20 percent reduction in energy usage per square foot and the increase in production energy efficiency are on target. Efforts are on schedule to accomplish by FY 2005 all the energy and water conservation projects that pay for themselves in less than 10 years. To help accomplish these goals, the Department has established a centrally managed fund of over \$1.1 billion over the period FY 1994 to FY 1999.

The potential benefits of the program are significant. A 20 percent annual energy cost avoidance will save approximately \$580 million per year with the coincidental benefit of reducing annual carbon dioxide production by 4.4 million tons, sulfur dioxide production by ninety-three thousand tons and nitrous oxide production by forty-three thousand tons.

BASE REALIGNMENT AND CLOSURE

In 1988 the Department of Defense, faced with unneeded bases, sought authority from Congress to close or realign domestic bases. Congress responded in October 1988 by passing the Base

Closure and Realignment Act. This Act provided the procedures and the legislative mandate to enable the recommendations of the 1988 Defense Secretary's Commission on Base Realignment and Closure to become law.

Congress in 1990 replaced this one-time commission process with an improved process involving Defense Base Closure and Realignment Commissions in 1991, 1993, and 1995. In passing the Defense Base Closure and Realignment Act of 1990, Congress stated that the purpose of the Act was to provide a fair process that will result in the timely closure and realignment of military installations inside the United States.

Closing and realigning bases worldwide supports DoD goals of maintaining military effectiveness while drawing down the force, reducing the deficit, and reinvesting in America. DoD's overall base closure policy has five guiding principles:

- To save money that would otherwise go to unnecessary overhead. Closing military bases worldwide saves taxpayer dollars and frees up valuable defense assets (people, facilities, and unused real estate) for productive private sector reuse.
- To improve military effectiveness by reducing the competition for ever scarcer resources. This permits DoD to invest properly in the forces and bases it retains.
- To be fair and objective. The Department is committed to recommending closures based solely on objective analysis of military requirements and not on politics.
- To close more overseas than domestic bases. DoD is reducing more of its overseas military forces and base structure than in the United States (15 percent at home versus over 50 percent overseas).
- To ease transition by supporting local economic growth. DoD can help facilitate local economic growth through investments in people, industry, and communities.

Domestic base closures approved to date will draw down the domestic infrastructure by about 15 percent, measured by plant replacement value. The Department is currently implementing three rounds of domestic base closures emanating from the recommendations of the 1988, 1991, and 1993 Base Closure Commissions. Overall, DoD is closing 70 major bases and realigning 38 others, as well as implementing over 200 smaller closures and realignments. The table below depicts the major domestic closures by Military Service for each round of closure.

Table IV-1 Major* Domestic Closures					
	U.S. Bases	BRAC 88	BRAC 91	BRAC 93	Bases Remaining
Army	109	-7	-4	-1	97
Navy/USMC	168	-4	-9	-21	134
Air Force	209	-5	-13	-4	187
Defense Agencies	12	0	0	-2	10
TOTALS	498	-16	-26	-28	428
* As defined in the DoD Base Structure Report for FY 1993, February 1992					

Base closures in 1995 are expected to exceed those of previous years because the closures to date have not kept pace with manpower and force structure reductions. The Bottom-Up Review concluded that although the world is still dangerous, defense forces can be prudently reduced as a result of the end of the Cold War. The defense budget will decline by more than 40 percent from its peak in the mid-1980s and by FY 1999 military personnel stationed in the United States will be reduced by about 30 percent (compared with FY 1989). Since the domestic base structure has been reduced by only 15 percent so far (as measured by plant replacement value), more domestic closures will be necessary in 1995 to align infrastructure with force reductions.

The Department's process for recommending bases for closure or realignment in FY 1995 will include increased emphasis on cross-service usage of bases that perform common support functions. The Department will also look at assigning operational units from more than one service to a base. In this way unused or underused capacity can be eliminated without any decrease in necessary services.

The Department is substantially reducing its overseas base structure as forces return to the United States. Since 1990, DoD has announced it will end or reduce its operations at 840 sites (about 50 percent of the overseas total). Future announcements will raise the total reduction to about 54 percent, thereby reducing overseas base structure to the minimum level necessary to support remaining forward-deployed forces.

Conclusion

The Department has embarked on a major effort to ensure that infrastructure and logistics are reduced commensurate with the activities they support. The Department's policy is that the overall size of these overhead activities will not grow in relation to the Department's output activities.

RESEARCH AND TECHNOLOGY

Introduction

The Department continues to place a high priority on Science and Technology (S&T) to provide the foundation of its defense capabilities and the ability of the research and development (R&D) communities to provide advanced weapon systems in order to maintain U.S. military superiority. Complementing this is a new emphasis on dual use technologies — those having both military and civilian application. The Department has also significantly refocused major portions of the R&D program in the Advanced Research Projects Agency (ARPA) and the Ballistic Missile Defense Organization (BMDO). These actions will allow the Department to gain the maximum leverage from defense and civilian technical advances.

Science and Technology Program

The S&T program was once driven by the need to maintain superiority over an aggressive and technologically capable adversary. Today, the S&T program is structured to maintain America's technology leadership and military superiority while supporting its economic security. The goal of the S&T program is to ensure operational forces have the systems they need to maintain military superiority, to prevent technological surprises, and to exploit technology to provide affordable, producible systems. These goals can be best achieved by taking advantage of an integrated effort consisting of defense and civilian technology developments.

The need to be prepared to respond, quickly and decisively, to conflicts which may occur anywhere requires that the S&T program be structured to address the needs of the military. Advanced technology will permit DoD to operate with a reduced force structure but, should the need arise, mobilize and be prepared more rapidly than in the past.

Modeling and simulation are examples of technologies that are being developed to supplement training, develop tactics, and evaluate new capabilities. DoD is also seeking to reduce procurement cost and production time through its investment in manufacturing and dual-use technologies.

SCIENCE AND TECHNOLOGY ORGANIZATION AND FOCUS

The Director of Defense Research and Engineering (DDR&E) provides leadership and direction to the basic research, exploratory development, and advanced technology development efforts. DDR&E has realigned the S&T effort to focus on those technologies that hold promise for significant improvement in warfighting capabilities while protecting the core competencies which are the foundation of overall military superiority. DDR&E oversees execution of programs that are administered by the military departments, ARPA, and the Defense Nuclear Agency (DNA).

In the past year, there have been two major changes in the S&T organization: DARPA was redesignated as ARPA and given responsibility for the Technology Reinvestment Program, and a Deputy Under Secretary of Defense for Advanced Technology (DUSD(AT)) was established.

The change to ARPA was made to recognize the significant contributions of that Agency's work in support of national as well as U.S. defense goals. While ARPA will continue to pursue technologies that provide leap-ahead military capabilities, it will also emphasize those that strengthen America's economic security.

The position of DUSD(AT) was created to provide an increased emphasis on technology transition. In light of the decreasing acquisition of new major weapon systems, the DUSD(AT) will ensure that technology is demonstrated through the use of Advanced Concept Technology Demonstrators (ACTDs).

Advanced Concept Technology Demonstration Program

The DUSD(AT) provides leadership for selected programs in advanced development. Specifically, the DUSD(AT) establishes guidelines for and oversees the implementation of selected ACTD projects designed to provide a rapid transition of maturing technologies into improved military operational capability. Each ACTD is an integrating effort involving very substantial cooperation and participation between the operational user and the S&T community. The user provides the operational context and concept of operations and manages the operational aspects of the demonstration; the S&T community provides the advanced technology elements. Thus, the emphasis in the ACTD is to address operational utility and operational cost effectiveness with minimal technical risk. The goal is to refine operational requirements and concept designs adequately to facilitate insertion of the new capability into the formal acquisition process with minimal delay and cost.

The DUSD(AT) also oversees the ballistic missile defense (BMD) development programs and the airborne reconnaissance development programs through the Defense Airborne Reconnaissance Office, which reports to him.

Advanced Research Projects Agency

Traditionally, ARPA has worked to stimulate, develop, and demonstrate technologies that enable fundamental change in future systems and operations. ARPA also is chartered to work on those technologies that have potential for addressing multi-Service requirements or technologies so dynamic as to require exceptional handling for optimal exploitation. The Administration's recent decision to change the designation of DARPA to ARPA and the subsequent modification of the agency charter validates ARPA's emphasis on imaginative and innovative R&D projects having significant potential for both military and commercial (dual use) applications. As ARPA emphasizes dual-use technologies, it will continue to interact with non DoD agencies and increase contacts with commercial industries to develop strategies for integration of military and commercial products and processes. This new emphasis on the critical relationship between economic security and national security presents a major opportunity for ARPA to seek maximum national benefit from DoD technology investments.

ARPA's program is structured into three broad areas: (1) continuation of the Technology Reinvestment Project (TRP), (2) Innovative Technology Development, and (3) military systems

application and demonstration programs. The continued emphasis on information technology throughout ARPA's efforts is central to the overall strategy to create fundamental change in military capability and represents a major opportunity for the United States to maintain or capture wide leadership in commercial markets.

TECHNOLOGY REINVESTMENT PROJECT

ARPA aggressively initiated action to implement the Defense Technology Conversion, Reinvestment, and Transition Assistance Act through creation of the TRP. The TRP established a planning and execution process for implementing the Administration's strategy to develop technologies that enable new products and processes, deploy technologies into commercial and military products and processes, and expand manufacturing training to provide a high quality work force for the 21st century. The Defense Technology Conversion Council (DTCC), chaired by ARPA, administers the TRP in a fully collaborative, interagency effort with the Department of Commerce, Department of Energy, Department of Transportation, National Science Foundation, and the National Aeronautics and Space Administration (NASA).

Eleven broad areas have been identified as key dual-use technologies for development under the TRP effort. While these areas are not considered to be exclusive, they were judged by the DTCC to have the highest priority based on future growth potential, military need, and commercial opportunities.

The 1993 key dual-use technology areas are as follows:

- **Advanced Battery** — To develop battery technology with greater energy density that can be used in man-portable applications.
- **Aeronautics** — Includes propulsion and engine technologies, optical based controls and sensors or fly-by-light vs. fly-by-wire systems, aircraft design and structures.
- **Electronics Design and Manufacturing** — Enhancing the ability to acquire small quantities of leading-edge custom electronics at affordable costs, to include process control of manufacturing, multi-chip integration, and optoelectronic module technologies and manufacturing.
- **Environment** — Changing manufacturing methods for electronic systems and enhancing environmental monitoring.
- **Health Care** — Improving patient and claims information systems and technologies for trauma care.
- **Information Infrastructure** — Includes integrating network architecture, advanced wireless communications, software development methods and tools, and improving methods for accessing heterogeneous data bases.
- **Materials and Structures Manufacturing** — The goal is to broaden the military use of advanced composites and to develop innovative forming technologies.

- **Mechanical Design and Manufacturing** — Improving the design and manufacture of electro-mechanical systems requiring forming and assembly.
- **Shipbuilding Industrial Infrastructure** — This effort will address innovative ship design and construction processes and ship systems technologies such as propulsion and auxiliary systems.
- **Training and Instruction** — Development of software tools for digital libraries and authoring tools to assist in writing high quality, computer-mediated training material.
- **Vehicle Technology** — To aid the development of alternative power sources, sensors, and electronics and vehicle integration including efficient power trains, regenerating energy from braking, and developing safer vehicles through use of on-board sensing.

After extensive interaction with industry and academia, the 1993 solicitation closed in July with more than 2,800 proposals received. Of this number, 162 proposals involving 1,300 participants have been funded to date.

A key measure of success for TRP programs will be whether they create, mature, and incorporate new technologies into new products and processes. Ultimately, however, the measure of success of these programs is their ability to generate a strong, integrated industrial base whose products will contribute to national defense and the commercial market. Beginning in 1994, the TRP also includes the MARITECH portion of the President's initiative for revitalizing the nation's commercial shipbuilding industry. MARITECH will be a program to accelerate technology transfer and change in the industry to protect the shipbuilding portion of the DoD industrial base.

EXAMPLES OF ARPA'S INNOVATIVE TECHNOLOGY DEVELOPMENT EFFORTS

This area emphasizes innovative, high payoff R&D efforts with a significant portion having dual-use applications.

- **Semiconductor Manufacturing** — Establishing the tools and methodologies to create affordable, flexible, scalable manufacturing to meet defense and commercial needs.
- **Microwave and Millimeter Wave Monolithic Integrated Circuits** — Developing fully integrated design, manufacturing, and testing capabilities to produce a wide range of advanced microwave/millimeter wave circuits at low cost.
- **Electronics Design and Manufacturing** — Improving the design, manufacturing processes, and packaging concepts of complicated systems by: (1) developing new packaging technologies; (2) improving the process by which complex digital, analog, and optical systems —

particularly embedded signal processors — are specified, designed, documented, and manufactured; and (3) developing advanced automated computer aided design/computer aided electronics software.

- **High Definition Systems** — Developing displays for use in aircraft, armored vehicles, and shipboard applications; graphics algorithms and scalable image processors; data compression techniques; and technology for manufacturing higher resolution, full color displays.
- **High Performance Computing and Communications** — Developing a scalable technology base of interoperating workstations, networks, and parallel computing systems with mass storage, systems software, and development tools for dual use.
- **Microelectromechanical Systems** — Fostering revolutionary, enabling technology with applications including miniature inertial measurement units for personal navigation, mass data storage devices, miniature analytical instruments, noninvasive medical sensors, fiber-optic network switches, and distributed unattended sensors for environmental and security surveillance.
- **Structural and Electronic Materials** — Investing in technologies and processes that promise to improve the manufacture and performance of materials that have the highest payoff for military and commercial systems.
- **Medical Technologies** — Investing in medical technologies that seek to provide medical care more quickly, with better knowledge, and at lower cost, specifically those medical technologies that exploit information and electronics technology to provide rapid, remote access to trauma care and medical expertise, and improve the administration of health care systems by allowing ready access to patient records and rapid, paperless patient processing.

EXAMPLES OF ARPA PROGRAMS IN MILITARY APPLICATIONS

- **Simulation** — Creating artificial environments for enhanced operational readiness through realistic training and improved system acquisition through more effective system assessment. ARPA is applying networking, intelligent gateways, high speed processing, advanced graphics, high definition systems, semiautomated force models, terrain generation, and human factors engineering techniques to enable distributed, interoperable simulations on synthetic battlefields.
- **Space Technology** — The key issue impacting future DoD and civil space capability is affordability. ARPA's strategy is designed to enable routine, affordable space architecture modernization. The strategic vision calls for the selective use of smaller, more capable satellites, as operational adjuncts, to simultaneously permit low cost technology insertion.

- War Breaker — Developing and demonstrating technologies and systems enabling a fully integrated, end-to-end system capable of targeting and neutralizing time-critical targets within enemy strike cycle times. The program exploits ARPA's technologies including advanced sensors, computing systems, automated intelligence correlation and processing, and distributed simulation.
- Advanced Short Take-off, Vertical Landing — Demonstrating that innovative design, development, manufacturing, and management techniques can be employed to reduce the cost of aircraft; and conducting actual flight testing of full scale aircraft.
- Maritime Systems Technology Programs — Reducing the cost of ship design and acquisition, through the use of simulation in all phases of a ship's life cycle; and developing automation techniques and distributed virtual environments to promote integrated product and process development that will pave the way for quicker, affordable development of ship systems.
- Contingency Mission Technology Programs — Developing technology for lightweight, deployable vehicles to form a basis for a variety of platforms (e.g., scout or target acquisition roles) for the next century.
- Command and Control — Developing technologies and concepts that will significantly improve battlefield management, and provide superior decision support to commanders.

Ballistic Missile Defense Organization

The BMDO research, development, test, and evaluation (RDT&E) activities are focused on upgrading existing systems such as Patriot and Aegis Standard Missile-2, deploying new capabilities such as the Theater High Altitude Area Defense (THAAD) system, and exploiting promising technologies offering major advances in BMD system capabilities. These activities represent a cooperative effort between the BMDO, the Services, defense agencies, the Department of Energy, the National Laboratories, federally funded R&D centers, and contractors ranging from large aerospace corporations to small businesses. Since the early 1980s, the ballistic missile defense RDT&E program has been the leader in providing the widest practical selection of BMD options and has provided proven technologies to support informed decisions and deployment of BMD systems.

The redesignation of SDIO to BMDO reflects the decision to place the highest program priority on development and acquisition of improved theater missile defense systems. Development efforts for the national missile defense program are the second priority, followed by technology R&D in support of BMD system acquisitions, including alternative systems, and revolutionary approaches to address advanced threats.

RDT&E continues as a key element of the BMDO program. Major elements are focused on the acquisition programs and technologies that enhance or enable advances in performance that

ensure a reliable defense against current threats and long-term viability of any deployment against an evolving threat. These efforts include: (1) development activities addressing specific needs and enhancements of BMD systems being deployed, and of the follow-on systems; (2) simulation for system design, end-to-end testing of the integrated defense system, and training; (3) manufacturing technologies, and (4) applied research.

Functional technology areas include interceptors, directed energy, sensors, and innovative S&T. Development of smart, miniaturized projectiles for exo- and endo-atmospheric applications is the main thrust of interceptor RDT&E. Advanced propulsion and guidance technologies developed for ground-based and space-based interceptors are being applied to a miniaturized, high velocity, air launched interceptor missile.

BMDO conducts RDT&E for directed energy systems, including chemical lasers. A scalable megawatt class laser and a large pointing mirror have been fabricated. These key components are now being integrated for an end-to-end test. Laboratory experiments which integrated BMDO-developed structural control components and algorithms have demonstrated the high pointing precision required for theater and strategic missile defense applications.

BMDO continues its efforts to develop effective passive sensor arrays with increased hardening and reduced weight and cost. Ongoing efforts are reducing the cost of discrete sensor elements by about a factor of two every year. The nuclear hardness of various sensor components (i.e., infrared mirrors, baffles, and focal plane array assemblies) was demonstrated to near sufficient levels for the BMD systems needs.

Innovative S&T programs are structured to make unique contributions to BMD by pursuing speculative, high-risk technologies that may enable a quantum leap in capability over that available from conventional approaches. The innovative program is two-fold — provide seed funding for promising technologies and transition those technologies into advanced technology demonstrators and to the private sector.

Much of the RDT&E pursued by the BMDO has broad application to meeting overall DoD needs with potential for dual-use applications. A second important objective is, therefore, to conduct a portion of Ballistic Missile Defense Organization RDT&E efforts in a manner that enhances this technology transfer. For eight years, the Office of Technology Applications (OTA) within BMDO has focused on moving BMD technology out of the Department and other federal laboratories and into the commercial marketplace and other agencies. It has been a model program, working closely with government, universities, and industry. To date, the OTA program has observed that 23 spin-off companies, 114 new products, 155 patents, 125 ventures, and 7 cooperative R&D agreements are transferring BMD technology to civilian use.

The activities of BMDO's Small Business Innovative Research are a case in point. In FY 1993, eight small firms, with missile defense technology as their centerpiece, raised nearly \$100 million in the capital markets and have an inferred valuation of over \$500 million. The BMDO investment in these firms through the small business program was just \$12 million.

Table IV-3 lists representative RDT&E accomplishments and their importance to both BMD capabilities and transfer potential to the commercial sector.

Table IV-3

BMDO RDT&E IMPACTS

Research Area and Accomplishments	Impact on BMD Capabilities	Potential for Military and Civilian Applications
Rocket Propulsion Miniaturized thrust-on-demand pumped propulsion subsystem	Boost-phase kill capability from airborne platforms enabled with agile, lightweight interceptor	Highly agile missiles for air warfare and other applications
Sensors 256 x 256 HgCdTe focal planes manufacturable; 256 x 256 InSb focal planes and cryo cooler integrated with camera; four new detector types - Hunter's Trophy underground nuclear test	- High quality/resolution detection of burning rocket engines (with 1 meter aperture on ground can detect small rockets at 2,000 km); major weight and cost reductions achieved - Nuclear hardness of various sensor components demonstrated as near to meeting BMD system needs	- Wide range of civil uses; InSb/camera application now on commercial market; capability and cost of infrared detection revolutionized in civilian market (home protection, environmental monitoring, etc.) - Nuclear hardened sensor components have wide applicability in DoD.
Electronics Artificial diamonds; thin film diamond coatings	Optically transmissive, heat resistant windows for high velocity, endo-atmospheric interceptor guidance systems; radiation hardened, rugged high performance semiconductors	Fostering a new U.S. industry with potential \$500 billion market, thin film diamond coatings for cutting tools and bearings that are virtually indestructible.
Computers - WASP — a complete computer on a 4-inch silicon wafer - Artificial neural network (with NASA/ Joint Propulsion Laboratories)	- High speed, naturally reconfigurable, fault tolerant processors - High speed image recognition, multiple target tracking weapon control, target assignment, etc.	Lighter weight, enhanced capability and reliability for NASA and commercial spacecraft
Communications Highly jam resistant, light weight transceiver, 1 gigabit laser comm	Jam resistant, high data rate satellite downlinks and cross links for BMC3	Beam steering techniques applied to medical radiation equipment; AWACS to AWACS rapid data downloading at station changes
Power 4 solar cell technologies space qualified; 30 percent efficiencies (3X current cells)	Cheaper, more efficient solar power for space elements of BMD	DoD, NASA, NOAA, civilian satellite applications
Lethality Lethality of kinetic and directed energy weapons	Fundamental to weapon designs	Methodology and data applicable to other DoD weapons
Materials Carbon carbon process time cut by 90%	Halves cost of missile and rocket components	Widely applicable
High Energy Laser Devices - Multi-megawatt laser successfully tested in lightweight space configuration - Incorporates advanced optics with ultra-high reflectivity coatings - Efficient diode pumped solid state laser demonstrated	- Demonstrated practical design for high power space configured weapon laser for boost-phase target kill - Highly loaded optics require no cooling — reduces weight and cost - Capability for target illumination, imaging and tracking at thousands of kilometers	- Potential for other space laser missions, e.g. counter-air - Simplified optics designs for commercial lasers - X-ray lithography, environmental monitoring using solid state laser
Acquisition, Tracking and Pointing (ATP) Inertial reference for pointing at tens of nrad; active vibration control in large space structures	Major components of a nanoradian class ATP subsystem for space-based tracking and pointing across ranges of thousands of kilometers shown feasible	- Highly stable, vibration free line-of-sight control for space-based sensors - High precision, high resolution, DoD and civil imaging and surveillance applications
Advanced Optics - Corrected atmospheric distortion by laser beams with high bandwidth active optics - Large (4m) lightweight segmented active optics demonstrated - Developed diamond-turning process for manufacturing nonspherical optics	- Improves feasibility of ground based or airborne laser weapons - Fabricated and tested optics for focusing and projecting high power space laser weapons beam - Orders of magnitude reduction in cost for laser device optics	- Increased resolution for space surveillance from ground, enabling ground-based astronomical telescopes with near-diffraction-limited performance - Makes possible very large segmented astronomical telescopes space or ground - Commercial manufacture of large optical components

Finally, 1993 saw the first two flights of the Single Stage Rocket Technology program at White Sands Missile Range, New Mexico, and the non-nuclear testing of a former Soviet TOPAZ space nuclear reactor. The latter was the result of a BMDO initiative to explore technology opportunities in the former Soviet Union.

Defense Nuclear Agency

DNA continues to fulfill a unique role in the Department, providing support to OSD, the Joint Staff, the Unified Commands, the Military Services, and other defense agencies on matters concerning nuclear and advanced conventional weapons, counterproliferation, and the Cooperative Threat Reduction program.

A Defense Science Board (DSB) task force recently reviewed the technical, programmatic, and managerial contributions of DNA and reported to the Secretary of Defense and Congress. The DSB task force reaffirmed DNA's unique roles and mission in providing national expertise on nuclear weapons and their effects and recommended a broadening of DNA contributions through the application of its nuclear expertise to conventional weapons area. On the basis of this review and an additional OSD/Joint Staff review, the Secretary of Defense on July 25, 1993, reported to Congress that DNA has been designated as the Department's center for nuclear expertise and that the agency's core nuclear competencies are relevant to evolving security needs in the areas of advanced conventional weapon, force application, and the safe and secure dismantlement of weapons of mass destruction (WMD), verification technologies, and counterproliferation technologies.

DNA's programs today reflect the results of these studies and almost two years of intensive internal review, as well as coordination with the users of DNA's products and services. Agency activities now include the application of nuclear-related expertise to non-nuclear problems. These include advanced conventional weapon targeting and strike options for regional contingencies; battle damage assessment of hardened facilities; targeting of facilities associated with WMD so as to minimize collateral damage; development of counterproliferation technologies, including predictive models for dispersion of chemical and biological agents for known terrain and weather conditions; and the acquisition of advanced radiation simulators to address weapon systems operability issues.

Some of DNA's current mission challenges are:

- **Systems Lethality** — Two lessons learned during the Gulf War were that the U.S. conventional weapons arsenal is deficient in its ability to destroy hardened underground structures and that collateral damage will be a continuing constraint in regional operations, particularly those in which WMD may be present. Understanding target design and vulnerabilities across the spectrum of war is essential to future military operations.
- **Weapon Safety Operability** — Success on tomorrow's battlefields may require military systems which can function during and after exposure to nuclear, chemical, and biological environments. DNA's programs support the command, control, communications, computer, and intelligence sensor

assets; air and missile defense systems; and personnel. In support of the design of military systems which must operate in nuclear disturbed environments, DNA has embarked upon an aggressive program to develop simulators.

- Cooperative Threat Reduction Program — Supporting the safe, secure, dismantlement of former Soviet WMD remains one of the nation's top security priorities. DNA serves as the program manager for efforts under the Nunn-Lugar/Cooperative Threat Reduction Program.
- Counterproliferation Technical Support — DNA is providing critical support to the Department's new Counterproliferation Initiative by focusing technologies in the areas of military response options. The program seeks to provide discriminant, optimized lethality against counterproliferation targets while minimizing collateral effects. Specifically, DNA's program emphasizes hard target kill capability, collateral effects research, targeting technical support and methodology development, and chemical weapon/biological weapon agent defense research and proliferation path assessments. DNA serves as the executive agency for the Assistant to the Secretary of Defense (Atomic Energy) in support of a DoD counterproliferation acquisition strategy and directly supports the Commander in Chief's counterproliferation requirements.
- Verification Technology Demonstration — The development of verification technologies associated with arms control is challenging. DNA conducts RDT&E of technology related to arms control treaty verification and compliance.
- Scientific Computing and Information Systems — High-performance computing capability is an essential underpinning of all of DNA's activities in conventional and nuclear weapons effects and their impact on weapon system lethality, operability, and safety. The DNA coupled radiation-hydrodynamic physical models of explosion dynamics are the most sophisticated and complex codes in existence anywhere.
- Management of the Department's Nuclear Stockpile — Nuclear weapons are complex systems requiring extensive maintenance and support. DNA manages the DoD nuclear stockpile, ensuring its reliability, safety, and security by conducting training, custody inspections, and applications and research and analysis.

Conclusion

The S&T community, in recognition of today's world environment and tomorrow's requirements, has established objectives and processes that will be responsive to those needs. While the goal is to provide the capabilities necessary to deter and, if necessary, defeat aggressors the United States is likely to encounter into the next century, S&T is at the forefront of efforts to ensure DoD does it with the least expenditure in lives and dollars. The Department's S&T community is committed to maintaining the U.S. edge in critical technology areas. The Department and users are committed to working together to achieve this goal.

Defense Components

Part V

STRATEGIC NUCLEAR FORCES

Introduction

The dissolution of the Warsaw Pact, the pending conclusion and implementation of the Strategic Arms Reduction Talks (START) I and II Treaties, and improving relations with Russia make the threat of a massive nuclear attack on the United States much lower than it has been in the past. However, tens of thousands of nuclear weapons continue to be deployed on Russian territory and on the territories of three other former Soviet republics. Even under START II, Russia will retain a sizable nuclear arsenal. And despite promising trends, the future political situation in Russia remains highly uncertain.

Two basic requirements to guide U.S. planning for strategic nuclear forces thus arise: the need to provide an effective deterrent while remaining within START I/II limits, and the need to allow for additional forces to be reconstituted in the event of a reversal of the currently positive trends.

The Bottom-Up Review did not address nuclear force structure in detail. As a follow-up to that review, a comprehensive study of U.S. nuclear forces is being conducted. Pending the results of that effort and assuming START II is ratified and implemented, the U.S. strategic arsenal by the year 2003 is expected to include at most:

- 500 Minuteman III missiles, each carrying a single warhead;
- 18 Trident submarines, each carrying 24 C-4 or D-5 missiles;
- 48 B-52H bombers equipped with air-launched cruise missiles (ALCM-Bs and advanced cruise missiles), and
- 20 B-2 bombers carrying gravity bombs.

Current plans for the B-52H could change. The FY 1995-99 defense program funds a force of 40 PAA B-52Hs. However, the Nuclear Posture Review could lead to a decision to increase the B-52H force.

Land-Based Intercontinental Ballistic Missiles

Under current plans, 500 Minuteman III missiles will be deployed at three bases. Plans to ensure that the Minuteman III system can be maintained to the year 2010 and beyond are well under way. In August 1993, the Air Force announced that Rockwell International Corporation had been selected to replace aging and potentially unreliable components of the Minuteman guidance system. Installation of the new subsystems is scheduled to begin in November 1997. Minuteman III solid rocket motors will be overhauled to correct age-related degradations and maintain system reliability. The stage 1 motors will go through their first depot refurbishment, after having been deployed for more than 25 years. The stage 2 and 3 motors, which have demonstrated only about a 17-year service life, will be refurbished for a second time. Refurbished motors will be installed beginning in FY 1988. Assuming

START I and START II enter into force, all Minuteman III missiles will be downloaded to a single warhead.

With implementation of the START II Treaty, the Peacekeeper system will be retired by the year 2003 — or by 2000 if agreement can be reached with the Russian Federation on U.S. aid in the dismantlement of strategic offensive arms. The Department is preserving the option to transfer the Mark 21 warhead from the Peacekeeper to the Minuteman system. The Mark 21 was identified as the safest U.S. nuclear warhead by the Drell Commission, which was established by Congress to investigate the potential hazards associated with handling, transporting, and deploying U.S. nuclear warheads. Mark 21 warheads contain safety-enhancing features such as insensitive high explosives and fire-resistant containers designed to prevent molten plutonium from leaking outside the warhead even if subjected to fire.

A significant challenge in future planning will be to ensure the continued viability of the industrial base needed to maintain and modify deployed strategic ballistic missiles. For the first time since the late 1970s — when Minuteman procurement was essentially complete and Peacekeeper development was just beginning — the Department is not developing or producing a new land-based ballistic missile. Development of a new intercontinental ballistic missile (ICBM) is not anticipated for at least 15 years. To forestall industrial base erosion, production of submarine-launched ballistic missiles (SLBMs), which would otherwise end in the 1990s is being slowed and will continue into the next century. The Department is also exploring new ways of preserving key industrial technologies; reentry vehicle and guidance technologies are particularly problematic.

Sea-Based Ballistic Missiles

Nuclear-powered ballistic missile submarines (SSBNs) armed with SLBMs will assume a greater share of the strategic nuclear deterrence mission once START II is implemented. Under START II, the SLBM force will provide about half of the 3,000 to 3,500 accountable warheads that the United States will be permitted to deploy.

The SLBM force, which is virtually undetectable when on patrol, is the most survivable and enduring element of the strategic nuclear triad. A significant portion of the SSBN force is at sea at any given time, and all submarines that are not in the shipyard for long-term maintenance can be generated during a crisis. Moreover, the Trident II (D-5) missile — with its improved accuracy, range, and payload relative to previous SLBMs — allows the SLBM force to hold at risk almost the entire range of strategic targets.

During FY 1994-95, the remaining seven pre-Ohio class SSBNs will be phased out of the strategic force. Six will begin dismantlement during FY 1994, and the remaining boat will be dismantled starting in early FY 1995. Three additional Ohio class SSBNs, now in various stages of construction, will be deployed at the rate of one per year from 1995 until 1997. All of these latter boats will carry the D-5 missile. The force of up to 18 Ohio class submarines then will form the bulk of the U.S. nuclear deterrent for the indefinite future. No new SSBNs or SLBMs are either under development or planned.

The FY 1995 budget supports the continued procurement of D-5 missiles for the 10 Ohio-class SSBNs configured to carry that system and for operational testing. A decision on whether to backfit the eight Trident SSBNs currently carrying the Trident I (C-4) missile with the more modern and capable D-5 will be made during the next year. In addition to the expense of modifying the SSBNs themselves, an SSBN backfit would require a major investment in additional D-5 missiles to equip the converted submarines. Those costs must be weighed against the better capability of an all-D-5 force and the potential savings that would accrue from not having to operate two separate missile systems or maintain the aging C-4 missile. The defense budget also continues to invest in SSBN security and survivability in recognition of the increased importance of the SSBN force as a component of the U.S. strategic deterrent.

Long-Range Bomber Forces

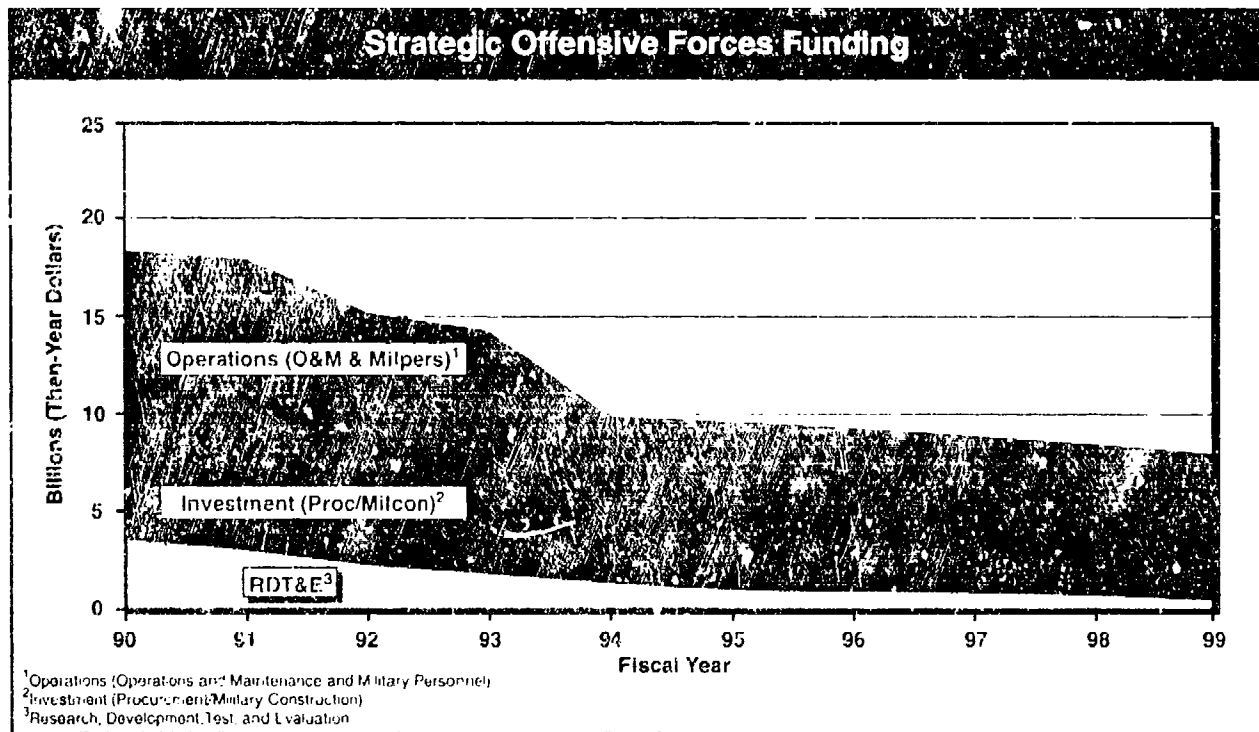
For FY 1994, the U.S. long-range bomber force includes 84 PAA B-1Bs and 64 PAA B-52Hs with the last of the B-52Gs having been retired in 1993. Key bomber modernization programs will ensure the United States maintains the ability to project power rapidly anywhere on the globe. The new B-2 stealth bomber offers unique capabilities in nuclear and conventional roles because of its ability to penetrate unassisted to strike key targets in heavily defended areas. The first B-2 aircraft was delivered at Whiteman Air Force Base, Missouri, in December 1993.

Although the size of the bomber force in the past was determined by nuclear targeting requirements, the future force will be structured to meet conventional force requirements for two nearly simultaneous major regional conflicts while ensuring that requirements for the third leg of the nuclear triad are also fulfilled. The stringent counting rules and deeper weapon reductions mandated by the START II accord will make it difficult for the United States to retain all of its bombers in the nuclear role. All three types of bombers in the force are currently dual-capable -- that is, able to deliver either nuclear or conventional weapons. Under START II, the B-1B bombers will not be counted as nuclear weapon carriers once the United States notifies Russia of its intentions to reorient these bombers to a conventional role. Under the terms of this accord, conventional bombers must be based separately from heavy bombers with nuclear roles, and they are not allowed to participate in exercises or training for nuclear missions. But bombers that are reoriented to conventional missions need not undergo any special structural conversions.

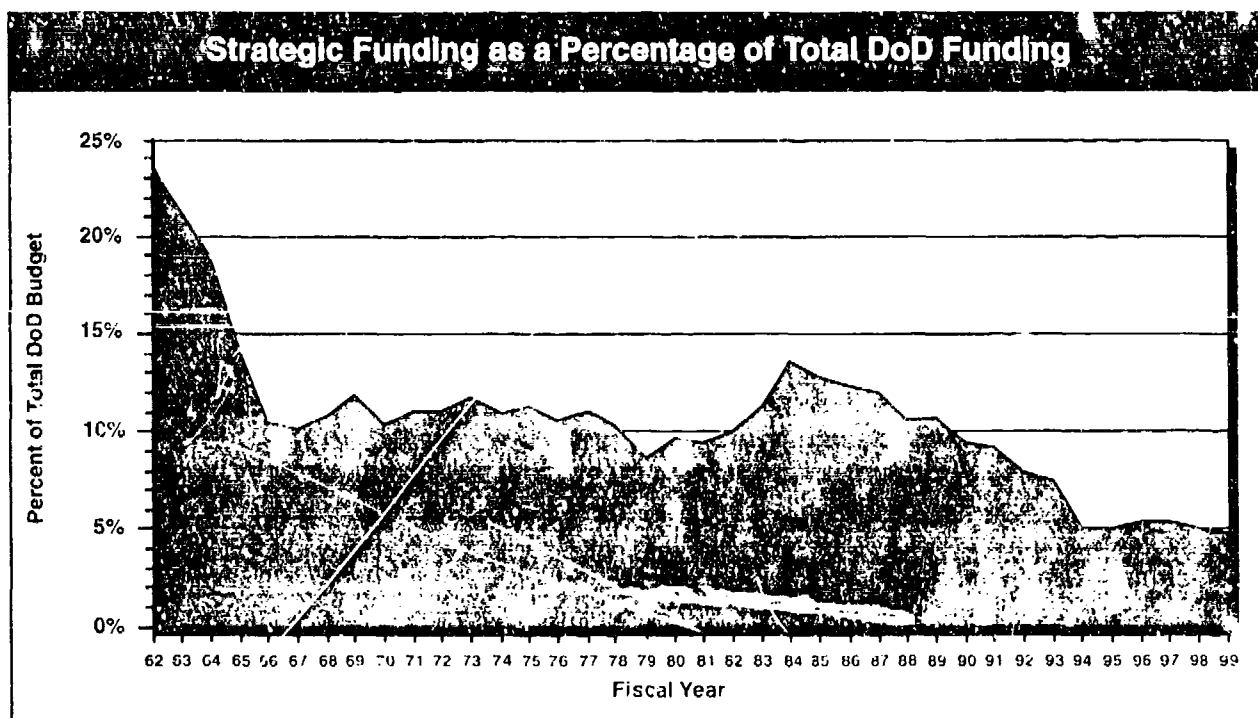
Reductions have also been made or are planned in the inventory of nuclear bomber weapons. SRAM-A missiles, whose warheads lack many of the desirable safety features of newer warheads, are being retired. Procurement objectives for the advanced cruise missile (ACM) have been scaled back from 1,460 to 460. Some ALCM-Bs have been converted to conventional cruise missiles (CALCMs); some gravity bombs and ALCM-Bs have been retired or placed in dormant storage. Finally, reflecting the relaxation in Cold War tensions, the bomber force is no longer maintained on constant alert.

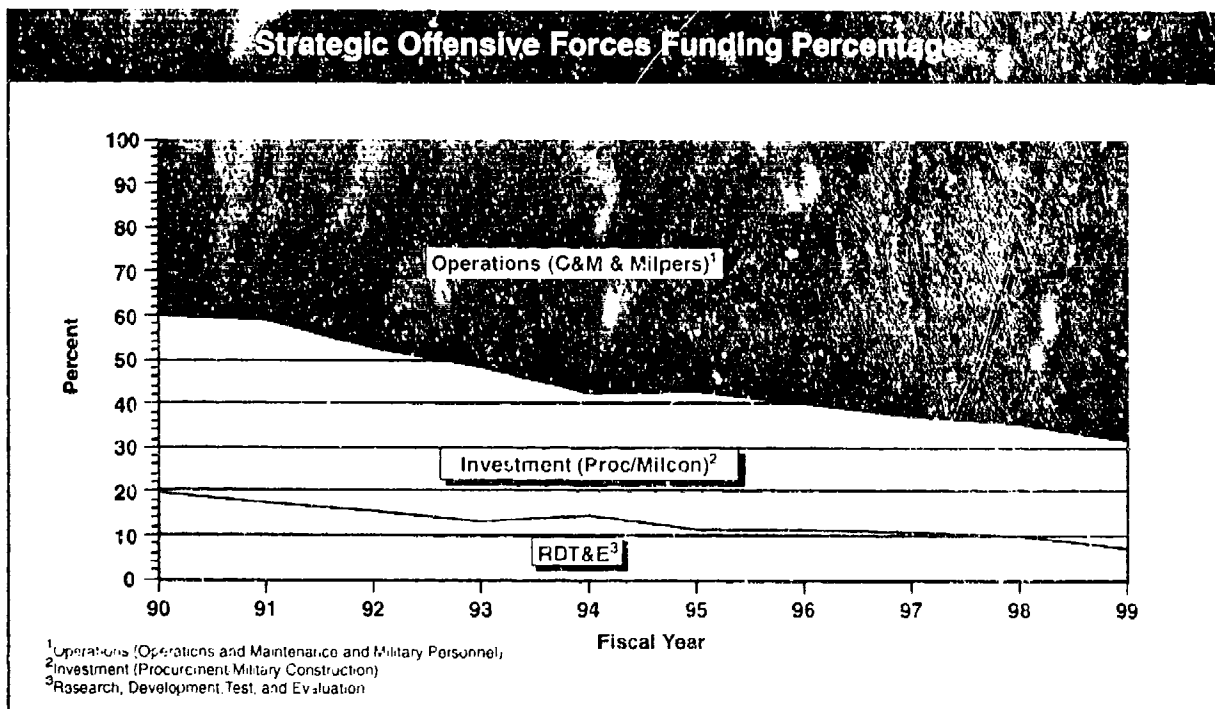
Funding

Reflecting the end of the Cold War, funding for strategic nuclear forces — bombers, ICBMs, and SLBMs — is the lowest it has been in more than 30 years. As shown in the following charts, this is true in terms of both total expenditures, adjusted for inflation, and the fraction of the total Department of Defense (DoD) budget that is devoted to these force elements. Spending for strategic nuclear forces reached its highest level in 20 years during the mid-1980s, when the Reagan Administration's strategic modernization program was being implemented. In 1984, for example, strategic nuclear programs accounted for 11 percent of the DoD budget. (Funding for strategic defense and strategic C³ programs accounted for an additional 2 to 3 percent of defense expenditures.) In 1994, strategic nuclear programs represent only 3 to 4 percent of the DoD budget, and one of the weapon systems included in this category — the B-1B — is transitioning to a predominantly conventional role.



Modernization programs for strategic forces have been completed or severely curtailed during the past few years. The only major acquisition efforts that remain are B-2 testing and modification, B-1B conventional mission upgrades, D-5 procurement to equip and support existing submarines, and Minuteman III life extension. As shown below, operations funding to sustain the readiness of the existing force now accounts for most strategic nuclear funding, increasing from 40 percent of the total as recently as 1990 to about 60 percent today. As the force structure stabilizes and modernization programs are concluded, operations expenditures will continue to grow as a share of the decreasing strategic nuclear forces budget.





Conclusion

Strategic forces remain a critical element of the U.S. policy of deterrence. Although the forces are being drawn down in the aftermath of the Cold War, they will continue to provide a strong and credible deterrent to nuclear attack. The ongoing review of nuclear forces being conducted by the Department may result in further changes to the planned force structure. The forces will, however, retain sufficient flexibility to respond to any conceivable reversal of the trends that are leading to mutual reductions in strategic nuclear forces.

LAND FORCES

Introduction

The Army and Marine Corps provide land forces capable of responding to any contingency. The Army maintains forces for power projection and sustained military operations on land, while the Marine Corps, as part of the nation's maritime forces, contributes expeditionary forces for power projection from the sea. These complementary capabilities provide a range of options to the President and the Secretary of Defense in carrying out military operations.

Since the demise of the Soviet Union and the Warsaw Pact, the Army has transitioned from a forward-based force with extensive overseas presence to a primarily U.S.-based force emphasizing power projection. Heavy forces — armored and mechanized units — are trained and equipped for mobile warfare and for operations against armies employing modern tanks and armored fighting vehicles. Light forces — airborne, air assault, and light infantry units — can perform forcible entry operations and are important in regions with restricted mobility, such as mountains, jungles, and urban areas. These units also provide critical support for heavy forces.

The Marine Corps maintains infantry forces that are designed for sea based power projection ashore. These units are fully integrated with aviation and ground support elements. Marine ground units are employed as part of Marine Air-Ground Task Forces (MAGTFs), which are task-organized units composed of command, ground combat, air combat, and combat service support elements. Marine units in strengths up to a Marine Expeditionary Force are forward deployed continuously on amphibious ships or ashore in regions of vital U.S. interest, from which they could provide a rapid, initial response should a crisis arise.

The Bottom-Up Review highlighted several principles that will guide force structure, readiness, and modernization initiatives for land forces in the years ahead:

- Regional dangers have become the basis for force planning, replacing global warfare focused on the Soviet threat. In particular, land forces must now be structured to meet the requirements of two nearly simultaneous major regional conflicts (MRC's).
- Operations other than war — humanitarian assistance, disaster relief, peacekeeping, and counterdrug efforts — are assuming increasing importance in the post-Cold War era.
- Power projection from the United States has become the primary means for responding to crises. Forward based forces are being reduced.
- Force readiness must remain at high levels, permitting rapid responses to contingencies, even those occurring in distant regions.

As a direct consequence of the Bottom Up Review, the Secretary of Defense determined the need to:

- Maintain 10 active Army divisions;
- Restructure the Army National Guard (ARNG) to provide about 37 combat brigades, of which 15 will be enhanced readiness brigades;
- Set end-strength objectives for the Army reserve component at 575,000, for the Marine Corps active component at 174,000, and for the Marine Corps Reserve at 42,000; and
- Continue development of the new Comanche armed reconnaissance helicopter and field improved versions of the Apache attack helicopter.

Missions

U.S. land forces must be prepared to confront a multitude of challenges. These include the spread of weapons of mass destruction (WMD); the potential for large-scale regional conflicts as well as lesser contingencies, including state-sponsored terrorism and subversion of friendly governments; and other threats to democracy around the world. Within this context, Army and Marine forces must be prepared to execute the following missions:

- Power projection and forcible entry. These operations require sea-based, land-based, and airborne forces capable of seizing and defending an adversary's air bases, ports, and other key facilities. This would be followed rapidly by a buildup of land combat forces using a combination of maritime prepositioning, fast sealift, and airlift.
- Combat operations on land. Potential scenarios range from large-scale, armored operations to smaller-scale, infantry operations, conducted in all types of weather and over various terrains.
- Operations other than war. Examples include assistance to foreign nations, humanitarian aid, disaster relief, assistance to law enforcement agencies during civil disturbances, peacekeeping, peace enforcement, and counterdrug operations.

This broad array of missions is illustrated by actual military operations over the last decade. U.S. land forces successfully executed campaigns in Grenada, Panama, and Iraq, ranging in size from small to large.

Today, however, land forces face even greater potential challenges. Over the last year, soldiers and Marines have participated in disaster relief efforts in the Midwest, Guam, and Hawaii; and they remain on guard in Somalia, where efforts continue to restore order and aid famine victims. On any given day, upwards of 50,000 soldiers and Marines are deployed in more than 60 countries. Additional demands from a new MRC, if one were to occur now, could require the deployment of a significant portion of the remaining land force structure.

Threat

A detailed understanding of the potential threats facing land forces is essential as the overall size of these forces is reduced. Threats can be characterized in terms of forces or weapon systems.

FORCES

The discriminating factor in considering enemy forces is the likely scale of military operations.

- **MRCs.** These potentially large-scale operations would place heavy demands on U.S. forces. Conflicts could arise in regions important to the United States where friendly or allied nations may be unable to match the power of aggressive neighbors. Combat would in all likelihood involve large-scale, armored operations against an enemy employing possibly 2,000 to 3,000 tanks.
- **Lesser regional conflicts (LRCs).** In these smaller contingencies, U.S. forces would primarily conduct peace enforcement or other intervention operations. Activities could include armored or mechanized infantry operations, albeit on a smaller scale than for MRCs.

WEAPON SYSTEMS

In general, threats encountered in MRCs would tend toward mixes of modern weapon systems, while those in LRCs would tend toward older weapon mixes. Many nations, including members of the North Atlantic Treaty Organization (NAATO) and the former Warsaw Pact alliance, are selling weapon systems. Thus, U.S. forces must be prepared to confront a wide variety of systems, including some previously produced in the United States.

As illustrations, older tank systems that U.S. land forces might face include Soviet T-55s and T-62s, as well as early-generation T-72s; newer systems include later-generation Soviet T-72s with enhanced reactive armor. For attack helicopters, older systems include Soviet MI-8/17 HIPs and German BO-105s; newer systems include Soviet MI-24/25 Hinds, MI-28 Havocs, and Ka-50 Hokums, and upgraded French SA-342 Gazelles.

New weapon technologies will add more advanced capabilities to the threat equation. Possible examples include tank upgrades (e.g., day and night optics, and active protection systems that redirect or destroy incoming projectiles), advanced antitank guided missiles capable of attacking tanks from above, fiber-optic guided missiles, tactical ballistic missiles, and 52-caliber tube artillery.

Force Structure

Consistent with the new defense strategy, U.S. Army and Marine forces will be structured to fight and win two nearly simultaneous MRCs. Current force planning assumes that four to five Army divisions and a Marine expeditionary force of four to five brigade-equivalents might have to be committed to a single MRC. 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). Fifteen enhanced readiness ARNG combat brigades will be capable of reinforcing Army combat forces in regional contingencies (for example, as round-up brigades for active Army divisions or as

separate brigades supporting active corps). These brigades will have the goal of being ready for deployment within 90 days of their mobilization.

DoD's objective is to have the force structure shown in Table V-1 in place by FY 1999. Corresponding Army and Marine Corps end-strengths are shown in the table as well.

With the exception of certain specialized capabilities (e.g., combat service support units needed in a particular climate), the forces required for LRCs and operations other than war are subsumed within those needed for two MRCs. For example, the land force contingent for a substantial peace enforcement or intervention operation might include up to one Army airborne or air assault division, one Army light infantry division, one Army armored or mechanized infantry division, and one brigade-sized MAGTF.

Table V-1 Army and Marine Corps Force Structure and End-Strength	
	Objective (FY 1999)
Army	
Active component	
Divisions	10
Armored cavalry regiments	2
End-strength ^a	495,000
Army National Guard	
Brigades	37 ^b
End-strength ^a	367,000
Army Reserve end-strength ^a	208,000
Marine Corps	
Active component	
Divisions	3
Wings	3
Force service support groups	3
End-strength ^a	174,000
Reserve component	
Division equivalents	1
Wing equivalents	1
Force service support group equivalents	1
End-strength ^a	42,000
NOTES: ^a End-strength figures include all functional areas of combat, combat support, and combat service support. ^b This number is approximate. Of this total, 15 will be enhanced readiness brigades.	

All Army active component divisions will have a full complement of three active component brigades. The previous concept of a roundout division — a division with two active component brigades plus a reserve component brigade available upon mobilization — no longer applies.

The need for ARNG combat units is driven in part by the potential for greater-than-expected threats to arise — either because an aggressor fields a larger or more capable force than anticipated or because the forces of several nations band together to form a coalition against U.S. interests. ARNG and Army Reserve forces also will be assigned combat support and combat service support tasks that they have performed effectively and responsively in the past. Up to 62 percent of the combat support and combat service support needed by Army active component units will be drawn from the reserve component upon mobilization.

STATIONING

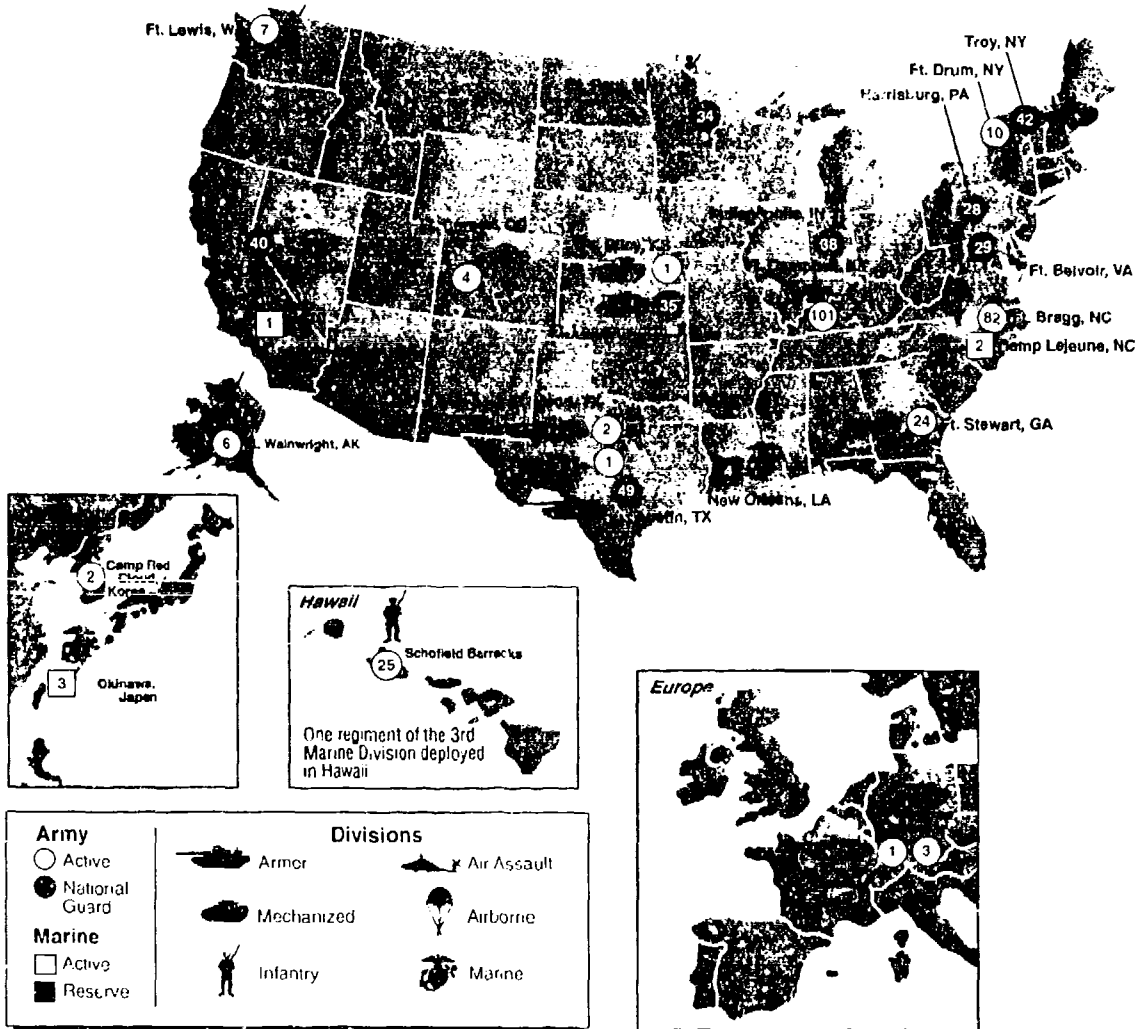
Europe and Atlantic Region

U.S. participation in the NATO alliance will continue to facilitate multinational training and crisis response. A corps headquarters, substantial elements of two Army divisions, and other supporting elements — with Army troop strength numbering 65,000 — will be retained in Europe. Five brigade-sized sets of Army equipment will remain prepositioned on the continent. This equipment will allow in-place divisions to grow to full strength and an additional division to be deployed quickly to the theater in the event of a conflict. For the Marine Corps, one brigade-sized set of equipment will continue to be stored in Europe; one Marine Expeditionary Unit will continue to be forward deployed in the Mediterranean Sea; and one Maritime Prepositioning Ship (MPS) squadron, with a brigade-sized set of equipment, will continue to be stationed in the Atlantic region.

Northeast Asia and Pacific Region

The Army Second Infantry Division, with two brigades plus other Eighth Army supporting elements and a total Army troop strength of nearly 26,000, will be maintained in South Korea to deter aggression from the north. The Third Marine Division (one regiment of which is deployed in Hawaii) and an Army special forces battalion will be retained in Okinawa. Prepositioned equipment will be maintained ashore in the Pacific region for one Army brigade. Also, one Marine Corps MPS squadron will continue to be stationed in the vicinity of Guam.

Deployment of U.S. Divisions



- NOTES:
- This chart indicates the official status of units, taking into account activations, inactivations, and conversions as of January 1, 1994.
 - The 26th Infantry Division and 50th Infantry Division (Mechanized) were inactivated in FY 1993.
 - The 6th and 7th Infantry Divisions will be inactivated in FY 1994.
 - Two additional Army active component divisions will be inactivated by the end of FY 1999.

Southwest Asia

Two brigade-sized sets of Army equipment will be stored ashore in the region. One of these sets will be maintained in Kuwait for use by U.S. forces who will deploy to the region on a rotational basis to train and exercise with Kuwaiti forces. One Marine Corps MPS squadron will be maintained in the region. In addition, Army equipment will be prepositioned afloat for one brigade plus selected corps- and theater-level units. This materiel could be used in an MRC in either Northeast or Southwest Asia, or elsewhere as needed.

Readiness and Sustainability

Readiness measures the preparedness of forces for combat. Key to readiness is the pace at which units train at their home bases, at combat training centers, and in joint exercises worldwide. Programs planned for FY 1995-99 will ensure that the readiness of U.S. land forces remains at the current high level. Sustainability is the ability of forces to conduct their assigned missions over the duration of a conflict. Attention is being paid to base operations, facility repair and management, supply levels, equipment repairs, personnel quality of life, and leader development — all of which play an important role in maintaining forces trained and ready for combat.

The Army's combat training centers include the National Training Center at Fort Irwin, California; the Joint Readiness Training Center at Fort Polk, Louisiana; the Combat Maneuver Training Center at Hohenfels, Germany; and the Battle Command Training Center at Fort Leavenworth, Kansas. The Marine Corps maintains the Air Ground Combat Center at Twenty-Nine Palms, California. With the exception of the Fort Leavenworth facility, these centers offer ranges for realistic field training of brigade-sized units.

Army and Marine Corps forces also participate in joint training exercises, both in the United States and abroad. Major joint exercises in FY 1993 included Keen Edge 93 in Japan, Team Spirit 93 in Korea, and Dynamic Guard in the Mediterranean Sea.

In addition to innovative and potentially beneficial readiness actions, the Army has initiated the Combat Vehicle Tactical Trainer (CATT) program to support small-unit collective training. This endeavor is an outgrowth of the Advanced Research Project Agency's Simulation Network project. CATT will allow combat vehicle crews to interact using a distributed simulation network. The first system being developed under this program is the Close Combat Tactical Trainer for tanks and armored personnel carriers.

To enhance the readiness of Army reserve component units, several actions have been authorized:

- **Equipment**—Plans and budgets will ensure that adequate equipment is available to the reserve component.
- **Personnel**—Full-time support personnel. Additional full-time personnel are being assigned to Army National Guard and Army Reserve units to perform key support functions, thus permitting reserve component personnel to

concentrate on training. By the end of 1993, some 2,000 active component officers and noncommissioned officers will provide direct support to reserve component units.

- Premobilization training. This training has been expanded. Emphasis is being placed on individual and small-unit training and on command and staff leadership multiechelon training. Combat simulators are being employed to increase training opportunities.

Sustainability also is being enhanced. For instance, two facilities (one on each coast) are being modified and upgraded for maintenance of prepositioned equipment. Nevertheless, DoD recognizes that shortfalls may occur in some areas, such as depot maintenance, training ammunition, and spares. Ongoing management improvement initiatives, depot and base consolidations, and the cascading of equipment from inactivated units may resolve some problems. DoD will review these areas continually, and take appropriate remedial action as necessary.

Modernization

Modernization programs for the Army and Marine Corps will assist in preserving the essential combat edge that U.S. forces now possess, add new capabilities for the future, and lay the technological groundwork for longer-term enhancements.

The Army has identified five modernization objectives:

- Projecting and sustaining forces. Improvements in force projection will come from increases in sealift capability and speed and from expanded prepositioning programs (both ashore and afloat), to get forces to areas of conflict more quickly. Additional improvements will come from acquisition of the man-portable Javelin antiarmor missile system and the air-transportable Armored Gun System, which will increase the firepower of initially deploying forces. Sustainability will grow as a result of initiatives such as the Army's Total Distribution Program, designed to track the location and control the distribution of materiel within a theater of operations.
- Protecting the force. Initiatives in this area include development of battlefield combat identification systems, to reduce fratricide; fielding of the Patriot Advanced Capability Level 3 missile system, which will improve defenses against cruise and tactical ballistic missiles; and improvements in chemical and biological defenses.
- Winning the battlefield information war. New, more capable intelligence systems such as the Joint Surveillance and Target Attack Radar System (JSTARS) will collect intelligence data. Automated systems such as the Army Tactical Command and Control System (ATC²S) will assist force commanders in processing information, formulating plans, and

disseminating decisions. Upgrades to Abrams tanks, Bradley Fighting Vehicles, and Apache helicopters will allow position and target data to be transmitted rapidly to maneuver systems.

Table V-2 Key Army and Marine Corps Modernization Programs				
	Current Dollars (Millions)			
	FY 1993 Annual	FY 1994 Budgeted	FY 1995 Planned	FY 1996 Planned
Army RDT&E				
ATCCS	196.4	141.0	194.2	176.2
Improved ATACMS	0.0	25.8	37.8	19.3
BAT	114.5	119.7	109.0	135.7
Apache Longbow	290.9	277.8	191.3	9.3
Comanche	394.2	366.7	525.2	374.0
Navy RDT&E ^a				
MAGTF C4I	26.2	60.6	30.8	18.7
Shallow-Water Mine Countermeasures	26.6	24.5	23.5	27.6
Intel Analysis System	4.6	5.7	3.1	2.9
Medium-Lift Replacement Alternative	714.6	9.8	496.9	711.7
Army Procurement				
ATCCS	67.8	52.3	81.1	104.3
Abrams M1A2	156.0	96.7	175.1	567.6
Bradley M2A2	124.6	192.4	145.4	147.6
Apache Longbow	0.0	0.0	117.6	352.6
Javelin	18.3	207.3	131.0	171.8
SINCGARS ^b	217.1	352.1	367.4	341.6
Marine Corps Procurement				
Avenger	28.5	19.2	50.2	52.6
SINCGARS ^b	58.4	45.9	49.0	48.8
Intel Support Gear ^c	41.6	26.0	33.6	40.8
Night-Vision Devices ^c	30.1	12.4	29.6	12.1
NOTES:				
^a Navy funds applied to Marine Corps RDT&E				
^b Single-Channel Ground and Airborne Radio System				
^c Includes multiple items				

- Conducting precision strikes throughout the battlefield. Initiatives in this area include the Army Tactical Missile System (ATACMS), with improvements designed to increase the range and effectiveness of

long-range fire support; advanced submunitions — such as Brilliant Anti-Tank (BAT) — that can be delivered by fire support systems, including ATACMS; and the new Comanche armed reconnaissance helicopter and modified Apache attack helicopter (C and D versions which include the Longbow fire control system) with enhanced abilities to detect and destroy enemy systems at long range.

- Dominating the maneuver battle. The Army will upgrade the Abrams tank (to the M1A2 version), upgrade the Bradley Fighting Vehicle (to the M2A2 and M2A3 versions), modify the Apache helicopter (to the C and D versions), and develop the new Comanche helicopter to improve the lethality and survivability of its forces in close combat. Improvements will include additional digital processing capabilities and new communications suites.

Marine Corps modernization focuses on:

- Conducting operational maneuver from the sea. Initiatives to modernize and improve Marine sea-based strike capability include replacing the aging medium-lift CH-46 helicopter with the Medium-Lift Replacement Alternative; enhancing amphibious surface assault capability; and improving command and control through the development of the MAGTF Command, Control, Communications, Computers, and Intelligence (MAGTF C⁴I) system.

Modernization is one aspect of an overall research, development, and acquisition strategy that is based on:

- Maintaining a robust and aggressive science and technology base.
- Conducting advanced concept technology demonstrations (ACTDs) of promising new technologies. This approach will help to mitigate technical risks by ensuring that technologies and associated manufacturing processes have been thoroughly demonstrated before formal acquisition programs are initiated.
- Focusing near-term modernization on incorporating advanced technologies into existing platforms. Only when design limitations have been reached or technological opportunities have surfaced — thereby rendering upgrades no longer cost-effective — will new development and production be considered.
- Maintaining an adequate, responsive industrial base for critical products to support continuous modernization and to meet potential reconstitution requirements.

One example of an ACTD is Battlefield Distributed Simulation Developmental, which will support the use of distributed interactive simulations for training (as for CATT) and for other applications. Another ACTD is the Joint Strike Demonstration, in which multiple service

target acquisition systems will provide precision target location data to long-range precision strike systems in near real time. Examples of efforts that involve technology insertion are upgrades to Abrams tanks, Bradley Fighting Vehicles, and Apache helicopters.

Regarding the industrial base, the combat vehicle sector is key to land force infrastructure. It is composed of two subsectors -- armored combat vehicles and tactical vehicles -- and includes a mix of private and public assets. Most new manufacturing is accomplished by private-sector contractors and subcontractors. Most sustainment activities -- maintenance, modification, and repair -- are carried out in government depots.

The existing combat vehicle industrial base is for the most part capable of meeting the military production requirements set forth in the President's budget. The light and medium armored vehicle subsector appears adequate to meet projected requirements into the next century, both at the prime contractor and subcontractor levels. Current and anticipated orders from domestic and foreign customers, plus mergers and acquisitions, should ensure a viable production base. The capabilities of the tactical vehicle subsector likewise should remain adequate for the foreseeable future, due to close ties to domestic commercial industry.

The ability of the heavy vehicle industrial base to effectively meet military requirements after 1999 is uncertain, however. For instance, current new production of the Abrams tank, all for foreign customers, is scheduled to be completed in 1996. Plans to upgrade M1 tanks to the M1A2 configuration, even if fully funded, may not sustain all elements at the subcontractor level. Since procurement of a new main battle tank is not expected before 2010, some tank industrial base capabilities may be at risk without additional foreign sales of tanks and strong, related research and development on advanced field artillery systems. DoD is closely monitoring trends in the heavy vehicle subsector to identify capabilities that must be nurtured.

Other Initiatives

Several efforts have been initiated to improve the effectiveness of land forces. The most important of these are:

- The Army has revised its doctrine to provide a power projection capability that can amass and sustain substantial combat power anywhere in the world. The revised doctrine recognizes the diversity of potential conflicts, the increasing likelihood of deployments on short notice, and the greater emphasis on joint operations. The doctrine provides the underpinning for all Army organization, training, materiel, and leader development issues.
- The Army continues to improve its doctrine and readiness through a series of exercises, tests, and studies, known collectively as the Louisiana Maneuvers. Named after the successful pre World War II training exercises of 1940-41, these activities enable the Army to practice its roles and missions; develop and explore innovative options; and identify training, doctrinal, and force structure issues. The Louisiana Maneuvers have resulted in improvements to policy, doctrine, organization, training, materiel, and leader development.

- The Army Training and Doctrine Command (TRADOC) has created battle labs to help identify requirements and priorities for the Army. The six labs — Early Entry, Mounted Battlespace, Dismounted Battlespace, Command and Control, Depth and Simultaneous Attack, and Combat Service Support — are collocated with corresponding TRADOC centers and schools. For example, the Dismounted Battlespace Lab focuses on optimizing night-fighting capability, improving target-acquisition capability, and enhancing soldier lethality and survivability; this lab is collocated with the Army Infantry School at Fort Benning, Georgia. The labs use distributed interactive simulations, as well as constructive models, to ensure that scarce resources are applied to initiatives with the greatest potential battlefield payoffs.
- Recently, the Marine Corps reorganized its Combat Development Command, which formulates and sets priorities for MAGTF combat capabilities. Close coordination with the Army Battle Labs ensures that Marine Corps and Army capabilities remain compatible.

Conclusion

Land forces provide the military means to take and hold territory. When deployed overseas, they give the clearest military evidence of U.S. commitment. The FY 1995-99 program provides adequate land force strength to sustain these fundamental capabilities in the future.

NAVAL FORCES

Introduction

Naval forces include aircraft carriers, surface combatants, submarines, amphibious ships, Marine expeditionary forces, mine countermeasure vessels, and maritime patrol aircraft (MPA). These forces and their supporting weapon systems project U.S. military power, provide overseas presence, and respond to regional crises and contingencies. As the United States confronts new challenges in the post-Cold War era, naval forces will play a critical role in a wide range of military missions and operations.

The Bottom-Up Review cited the unique contributions of naval forces in supporting U.S. interests abroad through overseas presence and crisis response operations. The FY 1995 budget and five-year program carry out the force structure and acquisition decisions arising from the review. The result will be a smaller, more modern naval fleet with the robust capabilities needed to meet new challenges.

Missions

The Navy's increased focus on regional contingencies and joint operations leads to an emphasis on the following mission areas:

- Strike Warfare — projecting firepower from the sea against targets ashore.
- Littoral Operations — massing U.S. and allied forces and moving them ashore to deter and, if necessary, overcome an aggressor.
- Forward Presence — using forward-deployed and forward-based forces to promote regional stability, improve joint operations with other U.S. forces and allies, and ensure timely crisis response.
- Surveillance — using a wide array of sensors to monitor air, surface, and subsurface areas employed by or of interest to U.S. forces.
- Strategic Deterrence — deterring nuclear or conventional attacks against the United States, its forces, or U.S. friends and allies.
- Space and Electronic Warfare/Intelligence — denying an enemy the use of the electromagnetic spectrum while exploiting it for U.S. purposes.
- Strategic Sealift/Protection — deploying and sustaining U.S. combat forces overseas through prepositioning, resupply operations, and other support.

In 1993, the Navy and Marine Corps (both active and reserve) participated in a number of military and humanitarian missions around the world. They supported U.N. resolutions against Iraq, including enforcement of the no-fly zone and maritime interdiction operations; provided

security for relief organizations and humanitarian aid to the Somali and Iraqi Kurdish populations; helped counter drug trafficking in the southern approaches to the United States; supported U.N. efforts in the Serbian/Bosnia-Herzegovinian conflict; and enforced U.N. sanctions against Haiti.

Threat

Whether employed in regional conflicts or peacetime presence missions, naval forces are focusing increasingly on the coastal, or littoral, areas of the world. Deployments in such areas expose naval forces to a variety of threats. Among the most worrisome are antiship cruise missiles, which are becoming increasingly available around the world through foreign military sales. These sophisticated weapons can be launched from the air, sea, or ground. The short reaction times inherent in countering them, once launched, limit the effectiveness of existing anti-air systems. There are numerous examples of the threat to modern warships posed by antiship missiles, the most notable being the 1987 Persian Gulf incident in which the USS Stark was struck by two Iraqi Exocet missiles.

Naval mines pose another serious threat in littoral environments. Potential adversaries can accomplish offensive and defensive mining not only by using inexpensive, primitive techniques, but also by acquiring new mine technologies that are resistant to current clearance measures. If preemption of an adversary's minelaying is not feasible, detection and avoidance, or location and neutralization of the mines by U.S. forces must be pursued. Failure to do so could hamper U.S. operational maneuvers from the sea and restrict the Navy's ability to control sea lines of communication. Operation Desert Storm dramatically illustrated how effective naval mining can be. One cruiser and one amphibious assault ship were seriously damaged by mines.

Another undersea threat -- diesel-electric submarines -- can be very difficult to detect under certain conditions. While the submarine threat has diminished relative to that posed by the former Soviet Union, diesel submarines nonetheless can disrupt shipping and hinder allied sea control in littoral areas. Numerous nations around the world operate diesel attack submarines. Though ultimately unsuccessful, undetected operations by an Argentine diesel-powered submarine during the 1982 Falklands War illustrate the danger inherent in this threat.

U.S. military strategy assumes that potential regional aggressors, in the aggregate, will field a range of capabilities with which U.S. maritime forces might have to deal. The Navy and Marine Corps will be structured and equipped to counter these threats, and to achieve national objectives in conjunction with other U.S. and allied forces.

Force Structure and Capabilities

In the past, carrier battle groups and amphibious readiness groups were the centerpieces of the U.S. naval force structure. Emphasis on these force elements continues in the post-Cold War period, although changes are being made in some of their components. Aircraft carriers and their air wings, and large-deck amphibious ships with embarked Marines, are well suited for regional conflicts, overseas presence operations, and peace missions. The requirements of these

deployments, rather than Cold War concepts emphasizing open-ocean operations, will determine the size and structure of U.S. maritime forces in the years ahead.

Current planning envisions a potential requirement to employ U.S. forces in two MRCs that occur nearly simultaneously. As many as four to five carrier battle groups and a like number of Marine Expeditionary Brigades (MEBs) could be needed for a single MRC. Forces to prosecute two nearly simultaneous conflicts would be derived from this MRC building block. Other requirements for maritime forces are driven by the need to maintain forward presence in areas critical to U.S. interests. Recognizing these requirements, the FY 1995-99 defense program provides sufficient maritime forces to prosecute two MRCs or to meet current overseas presence obligations, while ensuring that an adequate rotation base is available to support the forces that are deployed.

FORCE STRUCTURE

Twelve aircraft carriers, including one designated as a reserve/training carrier, and 11 large-deck amphibious ships will constitute the core of the Navy's projected fleet (see Tables V-3 and V-4). These 23 aviation-capable ships will be the centerpieces of U.S. naval forces needed to fight and win two nearly simultaneous MRCs or fulfill overseas presence requirements while maintaining an adequate rotation base at home.

Further adjustments, reflecting post-Cold War needs, will trim the force to about 330 vessels by FY 1999. Longer-term force structure goals will include:

- 11 aircraft carriers (active);
- 1 aircraft carrier (reserve/training);
- About 110 to 116 major surface combatants;
- About 10 reserve frigates; and
- 55 attack submarines (about 45 as a longer-term goal).

Consistent with the need to integrate Navy and Marine Corps elements for littoral operations, these forces will be employed in Naval Expeditionary Task Groups (NETGs). The Navy is examining various NETG configurations that could be tailored to meet the demands of a specific deployment or conflict. A notional NETG might consist of a carrier and large-deck amphibious ship, supported by surface combatants, amphibious forces, a Marine expeditionary unit, attack submarines, and maritime patrol aircraft. As an example of this new force employment concept, two battle groups integrated with an amphibious ready group and a Marine expeditionary unit were deployed in 1993 with a mix of Navy and Marine aircraft in their air wings. Each group included one aircraft carrier, three amphibious lift ships, six to seven surface combatants, and two attack submarines.

Aircraft Carriers

Table V-3

		(Number of Years in Service)																		
		92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
Forrestal	CV 59	37	(R)																	
Saratoga	CV 60	36	37	(R)																
Ranger	CV 61	35	(R)																	
Independence	CV 62	33	34	35	36	37	38	(R)												
Kitty Hawk	CV 63	31	32	33	34	35	36	37	38	39	40	(R)								
Constellation	CV 64	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	(R)		
Enterprise	CVN 65	RC	RC	RC	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
America	CV 66	27	28	29	30	(R)														
Kennedy	CV 67	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Nimitz	CVN 68	17	18	19	20	21	22	RC	RC	RC	26	27	28	29	30	31	32	33	34	35
Eisenhower	CVN 69	14	15	16	17	18	19	20	21	22	RC	RC	RC	26	27	28	29	30	31	32
Vinson	CVN 70	10	11	12	13	14	15	16	17	18	19	20	21	22	RC	RC	RC	26	27	28
Roosevelt	CVN 71	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	RC
Lincoln	CVN 72	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Washington	CVN 73	(C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Stennis	CVN 74				(C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
United States	CVN 75						(C)	1	2	3	4	5	6	7	8	9	10	11	12	
	CVN 76										(C)	1	2	3	4	5	6	7	8	

(R) Retire

(C) Commissioning

(RC) Refueling Complex Overhaul

Amphibious Air-Capable Ships

Table V-4

		(Number of Years in Service)																		
		92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
Two Jima	LPH 2	31	(R)																	
Okinawa	LPH 3	30	(R)																	
Guadalcanal	LPH 7	29	30	(R)																
Guam	LPH 9	27	28	29	30	31	(R)													
Tripoli	LPH 10	26	27	28	(R)															
New Orleans	LPH 11	24	25	26	27	28	29	(R)												
Inchon	LPH 12	22	23	CV																
Tarawa	LHA 1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Salpan	LHA 2	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Belleau Wood	LHA 3	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Nassau	LHA 4	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Peloliu	LHA 5	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Wasp	LHD 1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Essex	LHD 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Kearsarge	LHD 3		(C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Boxer	LHD 4			(C)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bataan	LHD 5					(C)	1	2	3	4	5	6	7	8	9	10	11	12	13	
Bon Homme Richard	LHD 6						(C)	1	2	3	4	5	6	7	8	9	10	11	12	

(R) Retire

(C) Commissioning

(CV) Conversion to Mine Countermeasures Support Ship

As Tables V-3 and V-4 show, two aircraft carriers and two large-deck amphibious ships were deactivated last year. Other deactivations in FY 1993 included one nuclear cruiser, eight

frigates, four guided missile destroyers, six amphibious assault ships, six hydrofoil ships, and ten nuclear submarines. Taking into account other planned ship retirements and future delivery schedules, the U.S. naval force in 1994 will consist of 387 ships (see Table V-5).

1994 Force Levels	
Strategic Submarines	16
Strategic Support Ships	2
Aircraft Carriers	12
Attack Submarines	87
Surface Combatants	110
Amphibious/Command Ships	41
Mine Warfare Ships	15
Logistic Force Ships	88
Reserve Combatants	16
Total Ships Battle Forces	387

CAPABILITIES

Naval expeditionary forces provide a range of capabilities for regional deployments. Operating independently or as part of joint task forces, they perform strategic deterrence functions, provide command and control of the battle environment, establish battlespace dominance, project combat power ashore, and sustain deployed forces. In addition, naval forces on patrol in international waters can operate independent of overflight and access rights granted by other nations, giving the United States a ready means of employing forces in regional crises.

- **Command, Control, and Communications (C³).** With an extensive C³ architecture — including systems in space, at sea, and ashore — naval forces provide an excellent command platform for all phases of an engagement. They enable joint force commanders to receive information from nationally-managed support systems and from tactical surveillance systems — such as MPA, carrier-based aircraft, submarines, and Aegis ships — and from communication networks ashore.
- **Battlespace Dominance.** The ability to control airspace and sea lanes in a littoral environment is critical to projecting power ashore. Aircraft carriers and surface combatants equipped with the Aegis air defense weapon system protect neighboring airspace. Submarines, battle force ships, maritime patrol aircraft and helicopters, and mine countermeasure forces control the surface and undersea environments.

- **Power Projection Ashore.** Carrier-based aircraft, cruise missiles launched from surface ships and submarines, and the Marine forces embarked on amphibious ships or supported ashore from Maritime Prepositioning Ships provide the capability to project U.S. combat power from the sea.
- **Force Sustainment.** Through their logistics elements, naval expeditionary forces are able to sustain military operations around the globe indefinitely. Forward logistics, prepositioning, and strategic sealift are the keys to this force sustainment capability. The Navy operates some 42 underway replenishment ships that provide fuel, food, munitions, and other supplies to deployed task forces around the clock and under most weather conditions. There are also about 20 tenders and other support vessels that can establish temporary local support sites in forward areas. These combat logistics and support forces are an integral part of the Navy's capability for independent operations.

Readiness and Sustainability

During the next fiscal year, naval forces will participate in more than 130 major unit exercises. More than half will involve joint operations with other U.S. or allied forces. Exercises improve the readiness of naval forces to carry out forward deployments, operate with other U.S. forces, and uphold commitments to U.S. allies. Comparable operations are planned through the remainder of the Future Years Defense Program (FYDP) period.

The number of flying hours per aircraft and steaming days per ship programmed for FY 1995-99 is identical to this year's level. For surface ships and submarines, the number of steaming days per quarter funded in FY 1995 is as follows:

Table V-6		
Quarterly Steaming Days for FY 1995		
	Nondeployed Fleet Units	Deployed Fleet Units
Atlantic	31	50
Pacific	27	51

Sustainability — the ability of U.S. naval forces to remain on station in a distant region or to conduct combat operations for prolonged periods — is a function of on-board allowances for afloat forces plus the additional materiel maintained in the Navy supply system. Sustainability objectives are designed to meet naval combat requirements for two MRC's. Procurement programs for munitions, spare parts, and other supplies will ensure this capability is retained throughout the FYDP period.

Modernization

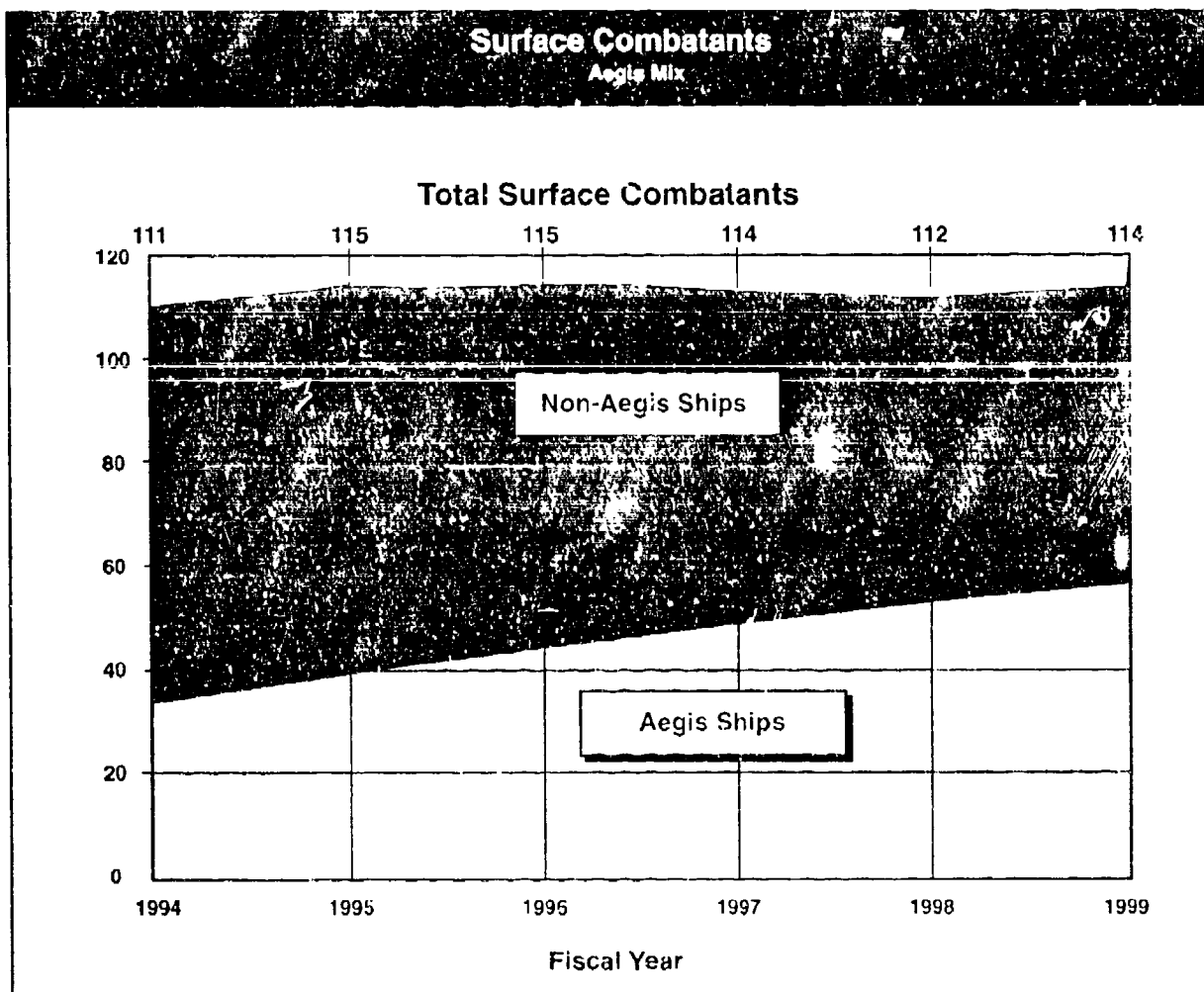
Key concerns addressed in the FY 1995 budget are the need to refine littoral warfare capabilities and meet long-term modernization requirements as naval forces are reduced in size. The initiatives planned for FY 1995 and coming years will maintain a robust naval force structure while hedging against uncertainties in the threat. To acquire the capabilities needed for the future and enhance current mission performance, modernization programs will focus on the following areas.

SHIPBUILDING

Ship procurement programs in the FY 1995 budget and FY 1995-99 program will provide replacements for older ships, modernize the existing force, and preserve critical elements of the shipbuilding industrial base.

- **Aircraft Carriers.** Two more Nimitz-class carriers will be delivered by FY 1998, and funding for the Navy's next carrier (CVN-76) is included in the FY 1995 budget. These ships will replace older, conventionally-powered carriers, supporting a force of 11 carriers, plus an additional carrier serving as a reserve and training vessel which also would be available for deployment.
- **Amphibious Ships.** Three Wasp-class LHDs and four new LSDs (a cargo variant of the LSD-41 class) will enter the force by the end of the decade. The new LPD-17-class amphibious assault ship (formerly the LX) will begin procurement in FY 1996. Twelve ships of this class will be needed to sustain the goal of providing lift capacity for 2.5 Marine brigade-equivalents. Although the amphibious force will decline in size as a result of ship retirements, and one portion of lift capability — vehicle space — will drop temporarily, the operational performance and flexibility of future amphibious forces will exceed today's capabilities.
- **Submarines.** The final SSN-688 Los Angeles-class submarine will be delivered in 1996, completing this 62-ship program. Two SSN-21-class (Seawolf) attack submarines have been funded for construction at Groton, Connecticut. A third boat of this class will be funded in FY 1996 to bridge the gap in submarine construction at the Groton shipyard. The Defense Acquisition Board is currently reviewing plans for a potential new class of nuclear attack submarine that would be less costly than the Seawolf. Procurement of the first boat of this class is not expected before FY 1998.
- **Cruisers and Destroyers.** With the delivery of CG-73 in 1994, the naval surface combatant force will include 27 Aegis cruisers. As DDG-51-class destroyers are delivered, older cruisers and frigates will be retired earlier than previously planned in order to achieve a revised goal of about 110 to 116 active surface combatants by 1995. The number of Aegis surface combatants will increase from 34 at the end of FY 1994 to about 56 by the

end of the decade. Ships carrying the Aegis system offer greater flexibility for operations in high-threat environments, while increasing overall U.S. air defense capability. The Aegis combat system can identify, track, and simultaneously engage many more air targets than could earlier air defense systems. Research and development (R&D) efforts will focus on providing the Aegis system with the ability to support theater ballistic missile defense operations. The chart below shows the changing mix of surface combatants in the force structure over the FYDP period.



- **Mine Countermeasure Ships.** Drawing from lessons learned during Operation Desert Storm, the Navy is expanding its mine countermeasure (MCM) capabilities. Two Avenger-class MCM ships will be delivered in FY 1994, completing this 14-ship program. The second Osprey-class mine-hunter will enter service in 1994, building toward a total of 12 of

these ships by the end of the decade. The Naval Reserve is assuming responsibility for a substantial portion of this mission, with 1 mine command and control ship (MCS), 4 MCMs, and 11 coastal mine-hunters (MHCs) slated to be in its inventory by 1998. These vessels will improve the ability of naval forces to locate and neutralize both moored and bottom mines.

- **Combat Logistics Forces.** The AOE-6 is an underway replenishment ship designed to provide on-station logistics support to expeditionary task groups. Ships of this class will augment AOE-1-class vessels. Four AOE-6s are now under construction. These ships will carry primarily fuel and munitions.
- **The Shipbuilding Industrial Base.** The ongoing reduction in the naval fleet clearly portends some overall contraction of the U.S. shipbuilding industry. The Bottom-Up Review concluded, however, that maintaining key elements of the shipbuilding industrial base is in the long-term national interest. The review highlighted the importance of maintaining critical industrial capabilities in designing and constructing nuclear-powered aircraft carriers and submarines. Currently, Newport News Shipyard in Newport News, Virginia, builds aircraft carriers and both Newport News and Electric Boat Shipyard in Groton, Connecticut, build submarines. The Bottom-Up Review assessed the economic consequences and the impact on the industrial base of acquiring both aircraft carriers and submarines from a single yard, leading to a decision to retain the two shipyards that currently provide these services. The Newport News yard will focus on overhauling and building nuclear-powered aircraft carriers, while the shipyard in Groton, Connecticut, will focus on submarine construction.

The industrial base supporting new surface combatant construction consists of two private shipyards: Ingalls Shipbuilding, Inc., in Pascagoula, Mississippi, and Bath Iron Works Corporation in Bath, Maine. Both of these yards have significant design, construction, and combat systems integration capabilities. DoD's review of surface combatant modernization requirements and the related industrial base concluded that a procurement rate of three DDG-51 Aegis vessels per year would adequately support these two shipyards.

The industrial base supporting construction of amphibious/auxiliary ships consists of three private shipyards: Ingalls Shipbuilding Inc.; Avondale Industries Inc., in Avondale, Louisiana; and National Steel and Shipbuilding Company, in San Diego, California. Naval construction work in this category is expected to decline to one-half the current volume of orders, leaving significant excess capacity that could be applied to commercial shipbuilding. The projected industrial base in this sector is sufficient to meet future Navy shipbuilding requirements.

WEAPON SYSTEMS

- **Ship Self-Defense.** The proliferation of antiship cruise missiles poses an increasing threat to surface forces. The Rolling Airframe Missile (RAM) — a lightweight, low-cost system using a 5-inch-diameter surface-to-air missile (SAM) — will be an effective point defense system against the cruise missile threat. During the coming year, RAM procurement will begin for future installation in DD-963s, FFG-7s, and LSDs. An additional layer of air defense, the Close-In Weapon System (CIWS), will be enhanced through computer hardware and software upgrades. A new version of the NATO Sea Sparrow Missile, called the Evolved Sea Sparrow Missile (ESSM), is being developed for potential installation on several ship classes. The integration of non-Aegis sensors and air defense weapon systems has also been developed and tested as the Ship Self-Defense System (SSDS) MK I for modernization of non-Aegis ships. The SSDS, scheduled for installation within the FYDP period, combines with the Navy's planned Cooperative Engagement Capability (CEC) to meet ship self-defense requirements against advanced cruise missiles.

A Surface Ship Torpedo Defense (SSTD) system is also under development to enhance ship defenses against torpedoes launched from submarines. Some elements of the SSTD system are nearing the end of development and will be installed on ships during the FYDP years.

- **SH-60B/F.** Helicopters extend the range and are integral to the overall capabilities of surface combatants for antisubmarine warfare (ASW), surface surveillance, and over-the-horizon targeting missions. Consistent with the decline in surface combatant force levels, the Navy's inventory requirements for SH-60Bs have been reduced. An additional seven SH-60B aircraft are slated for procurement through FY 1994, completing production of this model. Experience in Operation Desert Storm and subsequent Navy analyses support adding an organic helicopter capability to the DDG-51 to enhance the ship's littoral warfighting capability. Accordingly, the DDG-51 Flight IIA will employ the SH-60B, including an armed version for antiship missions in littoral environments.

The F version of the SH-60 is replacing the obsolete carrier-based SH-3H as naval battle groups' inner-zone ASW helicopter system. Enough of these aircraft have been procured in prior years to meet the carrier ASW requirement through the turn of the century. Accordingly, the FY 1995 budget terminates SH-60F production.

In the future, SH-60Fs and SH-60Bs will be remanufactured into newer variants that will provide advanced capabilities for littoral warfare and special operations. These conversions will help meet future requirements for sea-based helicopters.

- **P-3C Maritime Patrol Aircraft.** Land-based MPA squadrons provide important surveillance and identification capabilities for peacetime operations and major regional contingencies. The responsiveness and

utility of these forces in littoral environments have been evidenced in Operation Desert Storm and subsequent deployments. The FYDP continues ongoing reductions in the active MPA force from 24 to 13 squadrons, while holding reserve strength at the FY 1994 level of 9 squadrons. Together, these steps will enhance the integration of reserve forces, permit the early retirement of reserve P-3Bs, and reduce costs as the entire MPA force shifts to a common P-3C airframe. The Navy expects to operate its P-3Cs to 40 years, and is studying additional extensions to about 50 years. With P-3Cs no longer in production, modernization is focused on P-3C upgrades. Emphasis has shifted from ASW to surface surveillance and antiship missions, including the Anti-Surface Warfare (ASUW) Improvement Program (AIP). This is a previously developed initiative that will improve the ASUW and over-the-horizon targeting capabilities of P-3Cs.

- **Tomahawk.** The Tomahawk cruise missile has demonstrated exceptional operational effectiveness from a variety of launch platforms, as evidenced in Operation Desert Storm and in the 1993 strikes against Iraq. Several improvements to the system were introduced during the past year, including the Block III missile and improved mission planning facilities and systems. The Block III version provides extended range, improved lethality, and enhanced mission planning flexibility.
- **Naval Surface Fire Support.** With the retirement of its battleships, the Navy is studying near- and long-term improvements in this mission area to support amphibious operations. Currently, most naval fire support is provided by tactical aircraft. While tactical air forces will continue to play a critical fire support role in the future, surface combatants also have important capabilities to contribute. Accordingly, the Navy is investigating gun, missile, and rocket technologies that could provide surface fire support at various ranges. Promising examples include advanced projectiles for existing 5-inch guns, advanced guns based on liquid-propellant and electro-thermal chemical designs, and use of a new attack missile system aboard ships. Acquisition decisions on specific programs await completion of ongoing Navy tests and analyses.
- **Surveillance and Communications.** The FY 1995 budget includes funds to upgrade the surveillance capabilities of the Navy's P-3, E-2C, and EP-3 aircraft. The budget also supports an expansion of unmanned aerial vehicle (UAV) capabilities, designed to give air-capable ships an organic aerial-surveillance capability. Funds also are provided for critical communications programs, such as extremely high frequency and superhigh frequency systems (EHF/SHF), the Joint Service Imagery Processing System (JSIPS), and the Joint Tactical Information Distribution System (JTIDS). These systems will enhance the command and control capabilities of force commanders in joint operations.

Freedom of Navigation

Freedom of Navigation information for U.S. naval forces can be found in Appendix G.

Conclusion

U.S. naval forces are structured and equipped to operate in the littoral environments expected in future regional conflicts. Naval forces provide sustained forward presence and a wide range of capabilities essential to defense missions — from humanitarian assistance to armed conflict. The transition to a leaner, more flexible force will require modernization programs that sustain the industrial base as well as fill operational needs. The initiatives outlined in this chapter will ensure that U.S. naval forces are ready and capable of meeting the challenges of the 21st century.

AVIATION FORCES

Introduction

Aviation forces are composed of fighter, bomber, attack, and electronic warfare aircraft as well as specialized support aircraft. These latter systems serve a broad range of functions, such as aerial refueling, airborne warning and control, and reconnaissance surveillance for targeting. Often the first on the scene in a crisis, aviation forces play critical roles in all phases of a military operation, providing capabilities to oppose threats from the air, land, or sea. Their diversity and flexibility stem, in part, from the differing roles and missions of the services that provide them — land-based aviation forces from the Air Force, carrier aviation forces from the Navy, and expeditionary land- and sea-based aviation forces from the Marine Corps.

The capability of aviation forces to respond quickly to regional contingencies makes them particularly important in the post-Cold War era. The Bottom-Up Review affirmed that aviation forces will provide a major portion of U.S. combat power in regional conflicts, especially during the initial phase. At the same time, the review underscored the important role that aviation forces play in peacetime presence missions. Reflecting these complementary requirements, the Bottom-Up Review established the following principles to guide aviation force planning in the post-Cold War era:

- Land- and sea-based air power deployed forward and air power projected from the United States will be an important component of crisis response capability.
- Aviation forces will be sized to meet the requirements of two nearly simultaneous MRCs as well as to carry out overseas presence missions.
- High readiness is key to keeping forces prepared for contingency response.

Based on these priorities, plus threat and affordability considerations, the Bottom-Up Review decided to:

- Maintain 20 Air Force general purpose fighter wings (13 active, 7 reserve component);
- Maintain up to 184 Air Force long-range bombers;
- Maintain 11 carrier air wings (10 active and 1 reserve);
- Maintain 4 Marine air wings (3 active and 1 reserve);
- Continue development of the F-22 and F/A-18 E/F fighter/attack aircraft; and
- Establish a Joint Advanced Strike Technology (JAST) program to guide development of common subsystems that would be needed by a new generation of lower-cost multirole aircraft.

Missions

Aviation forces have the following missions:

- Sustain deterrence — deter aggression against the United States and its allies by maintaining ready and flexible forces capable of responding to any form of aggression.
- Gain and maintain control of the air — protect the United States, its forces, and its allies from hostile air attacks; secure land and maritime air superiority early in the conduct of operations; organize and operate integrated theater air defenses; attack and suppress enemy air forces and air defenses; gain sufficient air superiority for the conduct of other operations by surface and air forces.
- Exploit control of the air — attack critical enemy ground targets, including command and control elements, resupply facilities, and transportation infrastructure; interdict or destroy enemy surface forces and their vital functions; provide close air support and maritime support; conduct search-and-rescue operations.
- Achieve command, control, communication, computers, and intelligence (C⁴I) superiority and situation awareness — conduct surveillance, reconnaissance, and target acquisition; systematically control and exploit the electromagnetic spectrum.
- Contribute to military operations other than war — support counterdrug, insurgency and counterinsurgency, contingency (humanitarian assistance, disaster relief) and peacekeeping operations, and combat terrorism.

To carry out these missions, aviation forces conduct counter-air, close air support, interdiction, strategic attack, and airfield attack operations, working in close coordination with ground and naval forces. When joint aviation forces perform these missions, the Joint Force Commander (JFC) will normally designate a Joint Force Air Component Commander (JFACC) to provide centralized direction and control. The JFACC concept was validated in Operation Desert Storm and established in joint doctrine and combatant commanders' concept of operations plans this year. The JFACC is the critical link between air assets available in the theater and their integration into a joint force capable of accomplishing, in a more effective manner, the missions the JFC requires.

Aviation forces carried out a variety of combat and noncombat operations during 1993. These included enforcement of the no-fly zones in Iraq and Bosnia, surveillance and logistics support for operations in Somalia, and strikes on Iraqi radar sites violating the U.N. accords that govern the no-fly zones.

Threat

Aviation forces must be capable of countering a broad range of threats. The Bottom-Up Review assessed potential regional aggressors as having the capability to field some 500 to 1,000 combat

aircraft as well as ground and naval forces with significant surface-to-air weapons capability. In addition to threats of this magnitude, aviation forces must be able to contend with weaponry of increasing sophistication. Examples include:

- New Russian fighters projected to be fielded at or shortly after the turn of the century. Given Russia's recent energetic entry into the international arms market, it is expected that its next-generation aircraft would be offered for foreign sale much more readily than was the case with Soviet first line weapons. The status of these future aircraft is uncertain; indeed, there has been some open discussion in the Russian media about the uncertainty of their being developed in the present difficult Russian economic situation. For the time being, however, it appears that the Mikoyan design bureau may be developing a new aircraft that could pose a serious threat to U.S. aircraft.
- Developmental fighters of other countries that will roughly equal current U.S. fighters. U.S. forces will need to maintain superiority over these fighters which, along with Russian exports, may proliferate in potential adversary air forces, including those in the Third World. One such foreign development is the French Rafale, a single-seat fighter that will combine good maneuverability with a reduced signature and employ advanced air-to-air missiles. This system is planned to achieve initial operational capability in 1999 in the French navy, and a land-based variant is expected to be an export candidate early in the next century.
- Dense and highly capable integrated air defenses, resulting from the widespread export of modern Russian and other surface-to-air missile (SAM) systems. These weapons could stress the ability of U.S. forces to operate in hostile environments (both air-to-air and air-to-ground). An entire new generation of highly advanced defense systems developed by the former Soviet Union is now available for export. Systems such as SA-10 and SA-12 ground-based anti-aircraft missiles and supporting surveillance and command and control systems are on the market. While DoD now has an increased understanding of these systems, they remain a serious challenge to quick and successful prosecution of an air campaign.

Force Structure and Capabilities

FORCE STRUCTURE

The Bottom-Up Review identified the need for an aviation force structure somewhat below the previous Administration's Base Force, but still capable of meeting future requirements. The relationship of the future force structure to the Base Force is shown in Table V-7.

Table V-7

Bottom-Up Review Force vs. Base Force (Fixed-Wing and VSTOL Fighter/Attack Aircraft)

	Base Force (End-FY 1997)		Bottom-Up Review Force (End-FY 1997)		Percentage Change
	Wings ^a	PAA	Wings	PAA	PAA
Air Force	26.25	1,890	20	1,440	-23.8
Active	15.25	1,098	13	936	-14.8
Reserve	2.75	198	1	72	-63.6
Guard	8.25	594	6	432	-27.3
Naval Aviation ^b	17	1,128	15	790	-29.9
Navy active	11	648	10	392	-39.5
Navy reserve	2	120	1	38	-68.3
Marine active	3	288	3	312 ^c	+ 8.3 ^c
Marine reserve	1	72	1	48 ^d	-33.3 ^d

^a Air Force wings are calculated on the basis of the number of units that could be formed assuming each had 72 fighter/attack aircraft, as found in a fully-structured wing. Navy and Marine Corps wings are structured differently, having both fighter/attack and support aircraft; only the fighter/attack aircraft are considered here. Navy wings have fewer fighter/attack aircraft than Air Force wings, while Marine Corps wings have more.

^b Naval aviation Primary Aircraft Authorized (PAA) reflects current Navy/Marine tactical aircraft integration policy.

^c With effects of integration, 268 PAA will be available to support a MAGTF directly; includes reduction in AV-8B PAA from 140 to 120. The level may be restored to 140 pending decisions on an AV-8B remanufacturing program.

^d Does not include 24 A-4M aircraft that are being retired. A decision has not yet been made as to whether the replacement aircraft will be fixed- or rotary-wing.

The Air Force will have a total of 22.1 fighter wing equivalents (FWEs) at the end of FY 1994. During FY 1995, approximately 1.1 F-16 FWEs and 0.5 F-15C FWEs will be retired. Some 24 F-16C/D aircraft are planned for delivery during FY 1995. An additional net reduction of 0.5 wings will be made during FY 1996 to reach the Bottom-Up Review goal of 20 wings. The resulting force will include the mix of aircraft shown in Table V-8.

Table V-8

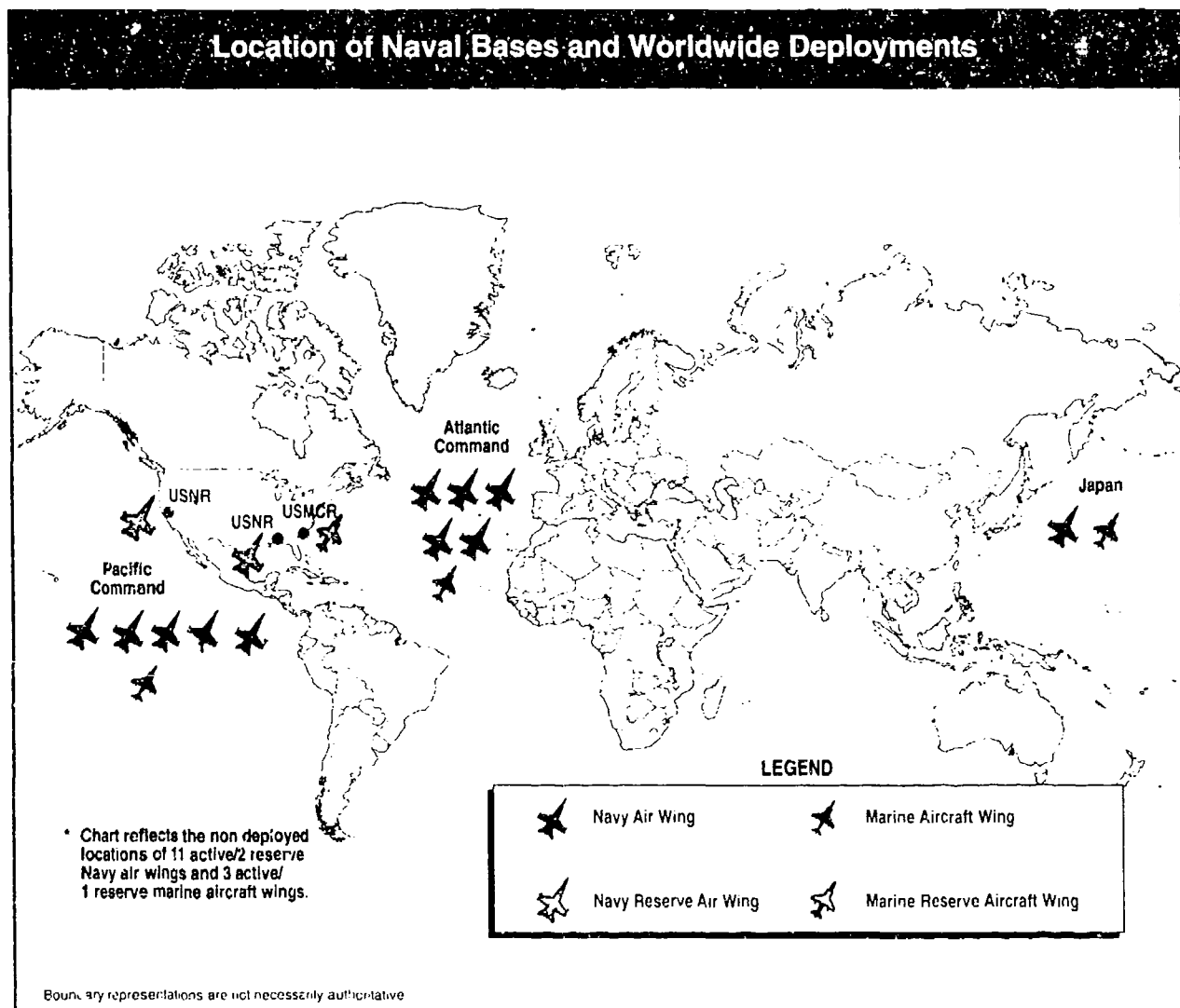
**Composition of Air Force Wings — End-FY 1996
(Fighter Wing Equivalents — FWEs)**

Aircraft Type	Mission	Total FWEs	Active FWEs	Reserve FWEs
F-15C/D	Air superiority	4.1	3.5	0.6
F-15E/F-111F	Long-range attack	1.9/0.75	1.9/0.75	0
F-16C/D	Multirole*	10.25	5.05	5.2
F-117	Attack	0.5	0.5	0
F-4G	Defense suppression	0.5	0.3	0.2
A-10	Close air support	2.0	1.0	1.0
Total		20.0	13.0	7.0

* Capable of both air-to-air and air-to-ground operations.

The Air Force will retire the F-4G Wild Weasel in FY 1997 and the F-111 in FY 1999. After FY 2000, F-15Es will replace the F-111's long-range strike capability. After they receive conventional bombing upgrades, B-1Bs and B-2s will supplement the F-15E in this role. Some F-16s and F-15s will be modified to assume the F-4G's role of locating and destroying enemy radar-guided surface-to-air missile sites. Most older models of the F-16 will be replaced with newer models, including specially-modified versions operated by air defense squadrons in the continental United States (CONUS). Air National Guard F-15 and F-16 units will retain responsibility for the air defense mission.

Naval aviation also is being restructured. The Navy will retire 2 active and 1 reserve carrier air wing (CVW), leaving 10 active wings and 1 reserve wing. A-6 attack aircraft are being retired at an accelerated pace, with the last of these aircraft scheduled to leave the force in FY 1997. With the A-6's retirement, the Navy will deploy two types of strike aircraft aboard its carriers: F/A-18s and F-14s. A modest air-to-ground upgrade is being added to some F-14s to give them the ability to drop laser-guided bombs from medium to high altitudes; aircraft with this feature will be available beginning in 1997. With this upgrade, both the F-14 and the F/A-18 will be multimission systems, increasing force flexibility.



The structure of the basic CVW will evolve throughout the 1990s as A-6s are phased out of the force in favor of a mix of new F/A-18s and modified older F-14 fighters (see Table V-9). The number of fighter/attack aircraft per CVW will be reduced to 50 from about 60 today. To provide additional combat power for major deployments, the Navy is exploring the possibility of augmenting carriers having fewer than 60 aircraft with aircraft deploying from the United States. Over the longer term, an entirely new naval multirole aircraft, possibly employing short takeoff and vertical landing (STOVL) technology, could be developed using the technology that results from the JAST program.

Table V-9

Carrier Air Wings in Transition

Air Wing Type	Aircraft Type (PAA per CVW)	Number of Air Wings					
		FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Transitional	F-14 (20), F/A-18 (20), A-6 (16)	3					
Power Projection	F-14 (20), F/A-18 (24), A-6 (16)	5	6	3			
36 Hornet	F-14 (14), F/A-18 (36)	2	4	7	10	10	10
Reserve	F-14 (14), F/A-18 (36)	2	1	1	1	1	1
Total Navy Combat Aircraft (PAA)*		704	566	496	430	430	430

* Marine integration provides up to 84 F/A-18 aircraft per year to meet total carrier requirements (60 aircraft long term — 36 active/24 reserve — plus up to 24 active aircraft temporarily during transitions).

The Marine Corps will maintain four air wings (three active and one reserve) throughout the program period. Significant changes are planned, however, in the structure of these wings, reflecting the increased integration of Navy and Marine Corps operations. The future will see three active and two reserve Marine F/A-18 squadrons and one active EA-6B squadron operating continuously as part of CVWs, significantly enhancing capabilities for littoral operations.

Marine air wings will be equipped as shown in Table V-10. In addition to the single-seat F/A-18 (which is identical to Navy models), the Marine Corps employs the two-seat F/A-18D as a multirole attack, reconnaissance, and tactical air control aircraft. The D version of the F/A-18 is specialized for night and adverse-weather operations.

Table V-10

Composition of Marine Air Wings — End-FY 1996 (Fixed-Wing and VSTOL Combat Aircraft — PAA and Squadrons)

Aircraft Type	Mission	Active PAA (Squadrons)	Reserve PAA (Squadrons)	Total PAA (Squadrons)
F/A-18A/C	Multirole	120 (10)	72 (6)	192 (16)
F/A-18D	Multirole	72 (6)	0	72 (6)
AV-8B	Close air support	140 (7)	0	140 (7)
Total for All Wings				404 (29)

CAPABILITIES

In evaluating future force requirements, the Bottom-Up Review determined that about 10 Air Force fighter wings, augmented by long-range bomber aircraft, would be needed to fight and

win a single MRC. From this force building block, a requirement for 20 fighter wings, plus bomber aircraft, was established for two nearly simultaneous MRCs.

Naval aviation requirements assume the commitment of four to five carrier air wings and the Marine aviation elements of four to five brigade-equivalents to a single MRC. Because of overseas presence requirements and the flexible nature of amphibious forces, however, a total force of 11 carrier air wings and 7 brigade-equivalents is planned.

Forces for lesser contingencies would be drawn from this basic structure. In these smaller operations, aviation elements could be employed jointly or alone. In most cases, they would be dispatched very early to the scene of a crisis, which could impose significant demands on air mobility and base support.

In an MRC, aviation forces would be key to securing a lodgment in the theater, establishing air superiority, deterring or slowing the advance of enemy forces, conducting operations against enemy centers of gravity, and laying the abutment for a sea and air bridge to support the introduction of follow-on forces. In a two-MRC scenario, the inherent flexibility of aviation forces would permit the rapid rotation of air combat power between theaters to ensure the defeat of a second aggressor.

The bulk of early-deploying aviation forces would be used to establish local air superiority and to attack enemy ground forces. A principal problem in conducting air-to-ground operations is effectively employing existing antiarmor munitions, while minimizing aircraft attrition. One solution is to suppress medium-altitude SAMs and hostile fighters, thus allowing U.S. aircraft to operate above the more numerous and difficult-to-detect lower-altitude antiaircraft threats. Operation Desert Storm showed how attractive operating from a medium-altitude sanctuary can be in minimizing aircraft attrition. This concept is radically different from the tactics that were planned for the early phases of a NATO/Warsaw Pact war, where most attack aircraft entering enemy airspace would have traveled virtually at tree-top level to avoid fighter aircraft and the extensive network of radar-guided SAM systems. One complication of medium-altitude operations, however, is that it is difficult for aircraft to locate and classify targets accurately. Guiding weapons to them is even more difficult. To close this gap, development of a variety of more effective weapons — such as the Joint Standoff Weapon (JSOW) and Joint Direct Attack Munition (JDAM) — is being expedited.

An important consideration in evaluating the effectiveness of aviation forces is the role of low-observable, or stealth, aircraft. Inherent in stealth technology is a significant degree of offensive air capability because of the increased capability to operate in defended airspace. Future trends in aviation forces will see an increase in the number of systems with this technology, such as the B-2 bomber and the F-22 fighter being developed for the Air Force. During the next century, aircraft derived from the JAST program will substantially increase the percentage of aviation forces that benefit from reduced signatures.

At present, low-observable aircraft form only a small part of the force, the current example being the 36 Air Force F-117A attack aircraft. Selective employment of these aircraft in a well-managed air campaign, such as was accomplished during Operation Desert Storm, can provide critically important damage against high-value point targets such as command and

control centers and air defense sites. The demise of the Soviet Union makes it possible to slow significantly the pace (and cost) of the technological evolution previously planned for aviation forces, procuring fewer numbers and types of these low-observable designs at reduced rates. For the foreseeable future, therefore, air operations will be conducted by a mix of stealth and non-stealth forces, with each element employed to its best advantage.

Air Force Fighter/Bomber Forces

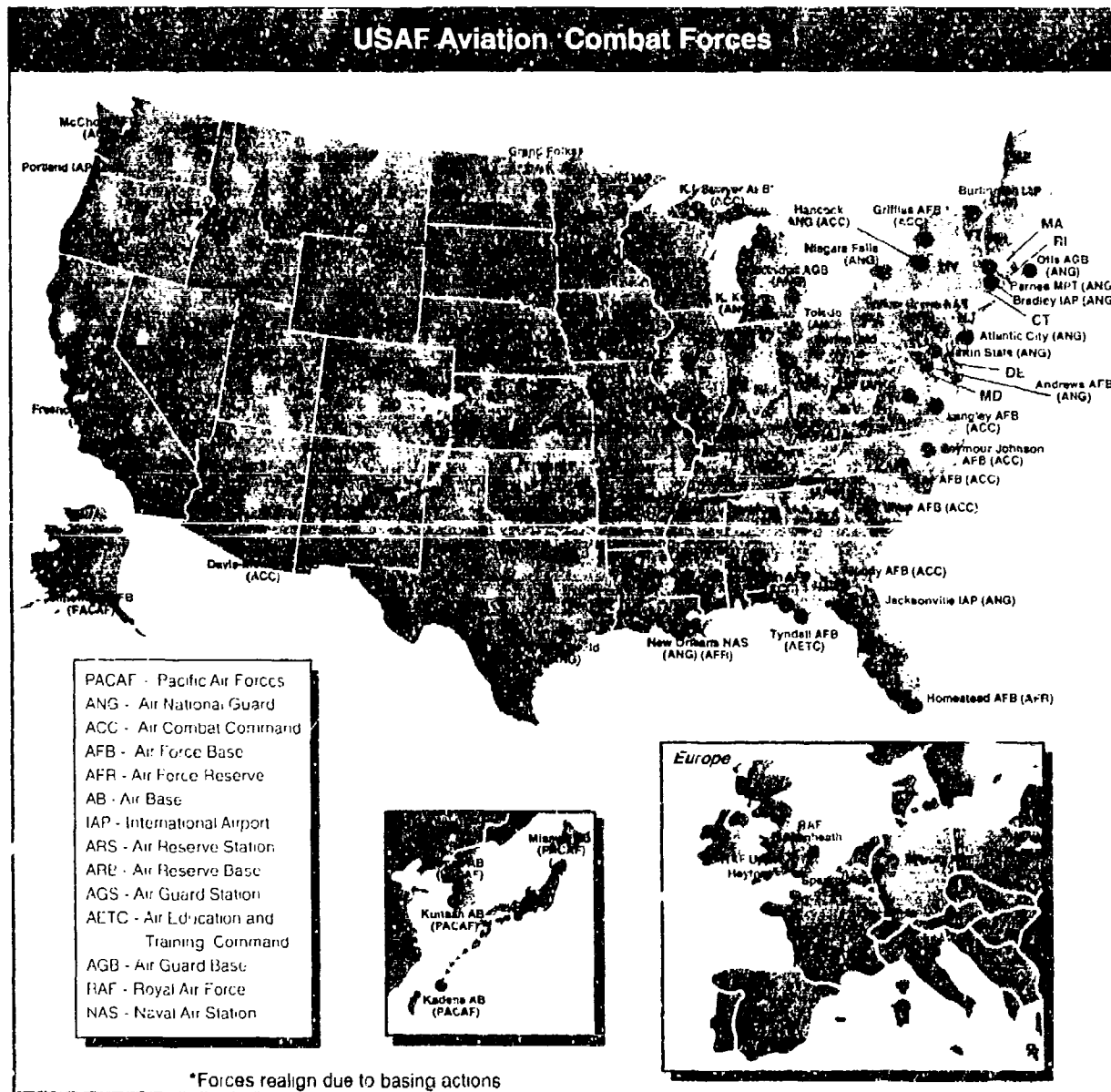
The Air Force provides versatile and responsive striking power for employment worldwide on short notice. The Air Force has instituted significant changes in its aviation forces to enhance capabilities for the post-Cold War era. Emphasis is being given to joint operations and rapid power projection for sustained combat. Additionally, the conventional capabilities of the Air Force long-range bomber force have been incorporated into regional warfighting strategies.

In an MRC, long-range bombers could deliver massive conventional firepower quickly, anywhere in the world. In conjunction with land and sea-based strike aircraft, bombers can attack enemy command, control, communications, and intelligence (C³I) systems, weapons of mass destruction, and fielded forces.

Composite wings are a key component of Air Force power projection capability. These new units, each including a mix of aircraft types (see Table V-11), provide increased responsiveness and geographical and operational flexibility over conventionally structured wings. One air/land wing, an intervention wing, and a special operations wing are being tailored to perform specific operations in a wide array of contingencies. A fourth composite wing is currently being organized. The increased readiness and cohesiveness of these units will help establish early air superiority, attack enemy ground targets, and secure a stable foothold in distant contingencies.

Table V-11					
Composition of Air Force Composite Wings (Typical PAA Combat and Support Aircraft)					
Wing	Air Superiority	Multirole	Ground Attack	Long-Range Bombers	Support Aircraft
Power Projection	12	18	12	7	6
Air/Land	0	18	15	0	33

The Air Force can inject seven to eight FWEs into theater as an initial response to an MRC with more FWEs within the first month. Two principal strengths of land-based aviation forces are their capacity for high sortie rates and the high percentage of their sorties that can be dedicated to ground attack. Enhancements in stealth, precision munitions, and all-weather technologies are planned, by the turn of the century, to significantly increase the lethality of both long-range bombers and fighters.



Aviation forces play a significant and ongoing role in keeping the peace overseas. Air Force overseas presence units include six FWEs permanently stationed in the Pacific and Europe, and another two FWEs currently supporting long-term operations in Southwest Asia, the Mediterranean, and Turkey. These forces help carry out U.S. commitments, promote regional stability, deter aggression, and provide a rapid means of responding to crises.

Bomber Modernization

The future promises major advancements in bomber capabilities and in the munitions that bomber forces carry. Precision weapons now in development will be integrated on bomber aircraft as well as on Air Force, Navy, and Marine Corps fighter/attack aircraft. Standoff precision weapons — such as the Tri-Service Standoff Attack Missile (TSSAM), JSOW, Conventional Air-Launched Cruise Missile (CALCM), and Have Nap missile — help long-range bombers attack targets that could otherwise be inaccessible because of heavy enemy defenses, even with significant suppression of enemy air defenses (SEAD) support.

Table V-12					
Air Force Long-Range Bomber Inventory (PAA)					
Aircraft Type	Mission	FY 1994	FY 1995	FY 1996	FY 1997
B-52H	Long-range attack	64	40	40	40
B-1B	Long-range attack	84	60	60	60
B-2	Long-range attack	4	7	11	12

As mentioned in an earlier chapter, the bomber force is composed of B-2, B-1B, and B-52H aircraft (see Table V-12). The first B-2 squadron will be operational by 1997. The B-2 can penetrate heavily defended areas to strike critical targets anywhere in the world while remaining virtually undetectable in night/adverse-weather operations. B-2 bombers will carry a full complement of gravity weapons as well as precision munitions, making them extremely capable and versatile power projection platforms.

The B-1B, being reoriented to a conventional role by the end of 1997, will be the backbone of the conventional bomber force. By the end of the decade, programmed upgrades will give the B-1B a precision munitions capability, enhanced electronic countermeasures, and advanced navigation systems integrated with the Global Positioning System (GPS). In the near term, the B-1B will be equipped to deliver cluster munitions, which will increase its effectiveness against large area targets.

The B-52H force will receive modifications to carry additional standoff precision weapons as they become available and to carry nonprecision weapons that cannot now be delivered. As the only CALCM carrier, this aircraft will perform standoff conventional missions while supporting the Navy with sea surveillance, mine-laying operations, and surface attacks with the Harpoon missile.

At present, long-range bomber forces would be used, as they were in Operation Desert Storm, to deliver large quantities of gravity bombs or cluster munitions against area targets, such as ground force units, airfields, and railyards. In the future, the long-range capability provided by bombers

could make them the first heavy weapon system on the scene in a rapidly developing crisis, particularly in regions where the United States does not routinely maintain forces. The current and programmed capabilities of the bomber force will ensure it remains a very flexible and responsive striking force that complements land- and sea-based fighter/attack forces.

Naval Aviation Fighter/Attack Forces

Naval and Marine air wings are self-sustaining forces, capable of conducting prolonged operations independent of basing rights. This capability derives primarily from the ability of naval forces to maintain sea lines of communication and resupply. In conjunction with ground and Air Force units, naval and Marine aviation elements constitute an enabling force, providing an initial response to aggression and supporting the deployment and establishment of land-based forces.

Power projection in support of littoral warfare remains a top priority for the Navy. Carrier-based aircraft are capable of a full range of other operations, however, from overseas presence and humanitarian assistance to peacekeeping and peace enforcement. Because of their inherent flexibility, carrier forces can be tailored to meet the needs of an initial deployment and then be reconfigured as the operation unfolds, to support emerging requirements.

Marine air elements are employed as part of Marine Air-Ground Task Forces (MAGTFs). Operating from ships or land bases, Marine aircraft provide offensive and defensive support as well as close air support for Marine ground units. In an amphibious operation, sea-based aircraft would provide the air support initially required by a MAGTF. Once a foothold had been established in the region, Marine aircraft, with their expeditionary support, would move quickly ashore, where they would operate from expeditionary fields, created if necessary by the landing force using temporary matting. Expeditionary airfields include all of the command, control, and logistics elements necessary for combat operations, and they can easily be redeployed to other locations, should circumstances warrant.

Specialized Support Forces

Specialized support forces are taking on added importance in the post-Cold War era. These forces perform a wide range of functions during all phases of military operations. Three of their most important missions are air-to-air refueling, electronic warfare/SEAD, and aerial reconnaissance.

Aerial refueling is critical to the effective employment of aviation forces. Not only do tanker aircraft facilitate rapid global mobility; they have a tremendous force-multiplying effect in the conduct of air operations. Airborne refueling significantly extends the operational range and endurance of aviation forces; it increases effective combat tempo; and it enhances flexibility in the employment of both land- and sea-based aviation forces. Aerial refueling aircraft for in-theater employment include Air Force long-range tankers discussed in the mobility section, as well as Navy and Marine Corps tactical aircraft. With the retirement of the A-6, the Navy will rely primarily on multimission S-3s and F/A-18 Hornets, while the Marine Corps will depend on its KC-130s.

Electronic warfare and air defense suppression forces provide the capability to locate, avoid, or neutralize enemy air defenses. A mix of lethal and non-lethal SEAD as well as electronic jamming and deception techniques was used with great success in Operation Desert Storm. The Air Force, Navy, and Marine Corps all operate aircraft for these purposes, as shown in Table V-13. Previously planned improvements to the Navy's EA-6B tactical electronic warfare aircraft — the Advanced Capabilities (ADVCAP) modifications — have been cancelled because of the high cost of the upgrade and the diminished threats of the post-Cold War era.

Table V-13

**Airborne Electronic Warfare Aircraft
(Inventory Holdings as of FY 1993)**

Surveillance / Electronic Intelligence	Support Jammers (Standoff and Escort)	Lethal Suppression
Rivet Joint / RC-135 (14 A/C – Air Force)	EF-111 (40 A/C – Air Force)	F-4G Wild Weasel (53 A/C – Air Force)
EP-3 (12 A/C – Navy)	EC-130 Compass Call (13 A/C – Air Force)	F-16 / F-15 HARM ^{a, b} (100 / 0 A/C – Air Force)
ES-3 (16 A/C – Navy)	EA-6B (131 A/C – Navy/Marine Corps)	F/A 18 / A 6 HARM ^{a, b} (980 A/C – Navy/Marine)
EA-6B ^b (131 A/C – Navy/Marine Corps)		EA-6B ^b (131 A/C – Navy/Marine Corps)
^a F-16s, F-15s, A-6s, and F/A-18s are not currently able to use the most accurate HARM firing modes.		
^b These aircraft have overlapping capability; the missions noted here are secondary.		

With the F-4G's projected retirement in 1997 and the cancellation of the EA-6B ADVCAP improvements, the Department wants to ensure that aviation forces will not have difficulty carrying out their missions, no matter how the threat evolves. Accordingly, the Department is conducting a comprehensive study to determine the adequacy of tactical electronic warfare capability. The study will evaluate requirements for electronic warfare aircraft; aircraft self-protection and expendable countermeasures; lethal and non-lethal suppression of enemy air defenses; the compatibility of projected electronic warfare capabilities with low-observable technologies; and projected advances in command and control warfare (C²W). The results will be used to identify the future capabilities that these forces may require, both in the long and short term. In the interim, the Air Force plans to field F-16s modified with upgraded HARM missiles. Additionally, selected F-15s will be given an enhanced capability to detect, identify, locate, and destroy enemy air defense radars. Neither of these modified systems is intended to completely replace the F-4G at this time.

In theater, airborne reconnaissance and surveillance systems are a primary source of information on enemy forces and ground installations. These systems offer a number of capabilities that cannot be currently duplicated by satellites. Improvements planned for the future will allow increased use to be made of satellite systems, which can collect data worldwide independent of

basing and overflight rights. Additionally, many combat aircraft (for example, B-2s, F-15Es, F/A-18s, and RAH-66s) are or will be equipped with increasingly capable weapons targeting sensors that will contribute to broader situation awareness. Some specialized airborne reconnaissance systems are needed to bridge coverage gaps between satellite systems and combat aircraft, however. Airborne reconnaissance systems fall into two categories: standoff aircraft, which operate outside the range of enemy air defenses, and penetrating systems, which can be operated directly over enemy territory (see Table V-14).

Table V-14 Airborne Reconnaissance and Surveillance Forces (Total Inventory)					
Standoff Systems	Current (FY 1993)	Planned (FY 1997)	Penetrating Systems	Current (FY 1993)	Planned (FY 1997)
E-2C Hawkeye	109	79	RF-4C	36	18
E-3B/C AWACS	34	34	F-14A TARPS	49	49
E-8C JSTARS	2 ^a	20	F/A-18D (RC)	0	31
U-2R	38	38	Pioneer	25	0
RC-135V/W	14	14	CRUAV	0	400
EP-3E	12	12	SRUAV	10	432
ES-3A	16	16	Interim M/A	0	10
OV-1D	54	0	UAV	0	TBD
RU-21	21	0	HALE UAV	TBD	TBD
RV-1D	13	0			
RC-12	48	36			
DHC-7	9	9			

Note: TBD = To be determined.
^a These aircraft are nearing completion of development and are slated to become operational in FY 1997.

Penetrating aircraft carry imaging sensors for close-up applications. At present, most such systems are film cameras carried on reconnaissance fighters. By the end of the 1990s, however, the penetrator force will consist mostly of unmanned aerial vehicles (UAV). Many reconnaissance fighters (RF-8s, RA-5Cs, and most of the RF-4s) have already been retired, and the bulk of the remaining aircraft will leave service soon. The current force of F-14A Tactical Aerial Reconnaissance Pod System (TARPS) aircraft and a small force of RF-4s carrying film cameras, plus a small force of F/A-18Ds carrying electro-optical cameras developed under the Advanced Tactical Air Reconnaissance System (ATARS) program, will be maintained as a hedge against uncertainties in UAV acquisition.

Standoff systems carry long-range sensors, such as radars and signals intelligence (SIGINT) collectors. These systems provide most of the information used to assess the progress of a combat operation; they also provide targeting data for ground forces and combat aircraft. The most modern and capable standoff systems will be maintained throughout the program period.

These include E-2s and E-3s for airspace surveillance, early warning, and fighter control; U-2s for ground reconnaissance; and RC-135s, EP-3s, ES-3s, and RC-12s for signals intelligence. The E-8C (JSTARS) system will enter service in the latter half of the decade. Several older systems — RU-21s, RV-1Ds, and OV-1Ds — will be phased out entirely in the mid-1990s.

Aviation Reserve Components

The missions, and therefore the structure, of aviation reserve forces differ across the services. Air Force reserve component units are fully integrated into war plans, and could be among the first to respond in a crisis. They are also assuming a more active role in supporting peacetime operations. The Navy has traditionally operated its reserve air wings as follow-on forces. The Marine Corps employs its reserve forces as augmentation and reinforcement for active component wings.

Reserve component missions are changing, however. The Air Force is transferring some B-52 and B-1 bombers from the active force to the reserves and is expanding the strategic lift and tanker capability of its reserve components. The Air Force also has given its reserve forces responsibility for air defense operations in the continental United States. The Navy has developed plans to maintain a reserve/training carrier as part of its fleet. This ship will be manned in part by reserve personnel and will be capable of operating with a combined Navy/Marine reserve air wing aboard. Although used primarily for training, the carrier could deploy forward for limited periods to relieve demands on active forces. The Marine Corps is undertaking a major modernization of its reserve forces, replacing aging A-4 and F-4 aircraft with F/A-18s. The Marines also are updating carrier qualifications for their aircrews, to facilitate their participation in the combined Navy/Marine reserve carrier deployments.

Readiness and Sustainability

Operational training and joint exercises are key to the readiness and combat effectiveness of aviation forces. Each of the services maintains excellent training facilities where joint large-scale live-fire exercises can be held. Major aviation training exercises include Red Flag/Green Flag at Nellis Air Force Base, Nevada; carrier air wing exercises at Fallon, Nevada; and combined-arms exercises at Twenty-Nine Palms, California. Joint exercises planned for FY 1994 include Team Spirit in Korea and Agile Provider in the United States.

Most aviation units have adequate supplies of war reserve spares and munitions. There is, however, some additional procurement planned during the next several years to alleviate shortfalls of war reserve spares for F-15E fighters and B-1B bomber aircraft.

Peacetime training requirements are adequately supported by stocks of replenishment spares and other consumable material. However, continued constraints on supply system funding for procurement of spare parts could lead to future shortfalls at the operational level. Such shortfalls could occur even if the operational level were adequately funded to obtain spares from the supply system. As a result, mission-capable rates would decline and spare parts would have to be borrowed from other units or from war reserve stocks in order to support peacetime training or contingency operations. Consequently, the Department will be seeking relief from limitations on replacing supply system stocks that would preclude meeting readiness objectives.

Modernization

The roles and missions performed by aviation forces determine their modernization requirements as well as their overall structure. Aviation forces must be equipped with very capable aircraft that are easy to operate and maintain, and that can be procured in sufficient numbers at an affordable cost. Reflecting these considerations, modernization programs for aviation forces are designed to:

- Sustain aircraft modernization. New aircraft procurement must sustain long-term force structure goals, protect and extend the U.S. lead in stealth technologies, and preserve essential elements of the industrial base.
- Improve aircraft survivability. Modernization initiatives in this area must take advantage of advances in low observability, defense suppression, and the promise of standoff weapons, to reduce aircraft exposure to enemy air defenses and enhance single-pass target destruction, thus increasing aircraft survivability.
- Dominate the information sphere. Modernization initiatives in this area must ensure that critical targeting and intelligence information is available immediately to combat forces, while denying such information to the enemy.

SUSTAIN AIRCRAFT MODERNIZATION

Changing threats, coupled with force structure reductions, have allowed some relaxation of Air Force and Navy fighter and attack modernization plans. The Multirole Fighter (MRF) and the A/F-X long-range attack aircraft programs have been cancelled, deferring a replacement for older Air Force F-16s. Looking to the future, the JAST program has been initiated to investigate lower-cost, modular engine and avionics technologies that could be applied to families of joint-service, multirole aircraft and associated strike weapon systems acquired during the next century. The technology demonstrations and prototypes developed under this program will provide mature technologies and a basis for choosing the next-generation replacements for several current aircraft as well as improve the design technology base. An early example of this effort is reflected in the Department's commitment to a phased Advanced Short-Takeoff Vertical Landing (ASTOVL) technology demonstration program which is also supported by the Congress.

For the near term, two aircraft acquisition programs — the F-22 and F/A-18 E/F — are being pursued (see Table V-15). The F-22, under development by the Air Force, will sustain the nation's lead in stealth and advanced avionics technologies. The F-22's low-observable design and superior sensor suite will allow it to operate virtually autonomously in the early phases of a conflict, establishing air superiority for follow-on operations, even in the presence of sophisticated enemy air defenses. In addition, the next-generation improvements in reliability and maintainability offered by the F-22 will enhance its availability in all phases of an operation. The F/A-18 E/F, being developed for the Navy and Marine Corps, builds on the proven combat capability of the current C and D models of this aircraft. The new versions will incorporate

improvements in range, payload, and survivability, which will recapture many of the capabilities lost with the retirement of the A-6.

Table V-15 Aircraft Modernization Programs					
	Current Dollars (Millions)				Year when procurement objective is reached
	FY 1993 Actual	FY 1994 Budgeted	FY 1995 Planned	FY 1996 Planned	
F-22					
RDT&E	1,925	2,083	2,461	2,319	
Procurement	—	—	—	50	FY 2011
F/A-18 E/F					
RDT&E	843	1,397	1,348	618	
Procurement	—	—	—	353	TBD
JAST					
RDT&E (Navy)	—	30	100	152	
RDT&E (Air Force)	—	—	101	152	TBD
F-14					
RDT&E	120	71	172	169	
Procurement	331	115	158	202	FY 1991
AV-8B					
RDT&E	12	18	10	12	
Procurement	39	167	169	276	FY 2000
AH-1W					
RDT&E	10	5	16	45	
Procurement	122	143	142	113	FY 1997
F/A-18 C/D					
RDT&E	52	57	63	51	
Procurement	1,315	1,697	1,203	1,252	FY 1997
F-15 E					
RDT&E	49	66	117	127	
Procurement	21	29	20	7	FY 1996
F-16					
RDT&E	109	61	93	172	
Procurement	599	470	101	230	FY 1997
Note: TBD = To be determined.					

The Navy also is modernizing its older F-14 force by adding a limited air-to-ground capability to about half of the current inventory. F-14s with this feature will be introduced in FY 1999; most non-upgraded F-14s will be retired before then. Once these modernization programs are complete, all of the power projection aircraft in the carrier force will have multimission capability. The Marine Corps is upgrading and extending the service life of its AV-8B fleet by remanufacturing older, day-attack-only aircraft to the latest night-attack/radar configuration. Additionally, the AH-1W Cobra will receive both a night-targeting and integrated weapons system. The remainder of U.S. fighter/attack forces — F-15s, F-16s, A-10s, and F/A-18 C/Ds — also will receive modest capability upgrades.

Modernization programs for aviation forces will preserve needed design and production capacity in the aerospace industrial base as overall aircraft procurement rates decline. Almost all aircraft prime contractors are now operating at approximately 50 percent of capacity, and that figure is projected to drop to 40 percent by the year 2000. DoD's program protects core industrial base needs. Procurement of both the F/A-18 E/F and the F-22 at modest annual rates will preserve aircraft production lines for future needs. The demonstrators and prototype aircraft to be developed as part of the JAST program will provide continued support for critical aircraft design teams and expand the technology and design base for future strike weapons systems.

IMPROVE AIRCRAFT SURVIVABILITY

Improvements are being made in the air-to-air and air-to-ground weapons carried by combat aircraft. Future air-to-air weapons for fighter aircraft will include enhanced versions of both the Advanced Medium-Range Air-to-Air Missile (AMRAAM) and the Sidewinder short-range missile. The greater lethality and range of these upgraded systems will offer a distinct advantage to U.S. forces in aerial campaigns.

New air-to-ground weapons with increased standoff range and improved accuracy will provide added benefits in combat operations. These include:

- The ability to attack highly defended targets from the onset of hostilities, without first having to destroy a series of peripheral defenses sequentially.
- Neutralization or reduction of the effectiveness of enemy antiaircraft systems. This will reduce aircraft losses and speed the follow-on use of direct attack weapons, which usually are less expensive than standoff systems. To counter this capability, potential adversaries would be forced to make large investments in upgraded air defenses at the expense of modernizing their offensive forces.
- Extending the effective reach of precision weapons far beyond the combat radius of the delivery platform, and with less exposure.
- Added flexibility in basing, mission routing, and attack options.

Key munitions programs for FY 1995-99 include:

- AGM-130. A powered version of the 2,000-pound GBU-15 glide bomb, designed to strike high-value, heavily defended targets.
- Standoff Land Attack Missile (SLAM). An imaging infrared guided missile variant of the Harpoon antiship missile optimized for precision attacks on surface targets.
- Sensor Fuzed Weapon (SFW). A tactical munitions dispenser containing 10 BLU-108 submunitions, each with 4 Skeet warheads designed to achieve multiple kills against mobile armor.
- Joint Direct Attack Munitions (JDAM). A series of targeting and sensor enhancements for existing general purpose bombs. Under the first phase of this program, bombs will be provided with an autonomous navigation capability. This will eliminate current shortfalls in adverse-weather operations and improve accuracy from medium and high altitudes. A subsequent Product Improvement Program (PIP) will focus on providing accuracy equivalent to that of today's laser-guided bombs.
- Joint Standoff Weapon (JSOW). A longer-range, aerodynamically efficient tactical munitions dispenser with excellent autonomous navigation capability. The baseline variant, which will carry combined effects bomblets, will provide an accurate, low-cost, standoff method of delivering tactical munitions in all types of weather. A follow-on version will carry an SFW-derived BLU-108 payload for standoff antiarmor capability. Further planned improvements will provide a unitary warhead and a man-in-the-loop seeker for increased accuracy and target discrimination.
- Tri-Service Standoff Attack Missile (TSSAM). A low-observable, long-range missile designed for use against heavily defended targets. This weapon will be particularly useful in SLAD missions.

Key elements of aviation weapons modernization programs are shown in Table V-16.

Table V-16					
Aviation Weapons Modernization Programs					
	Current Dollars (Millions)				Year when procurement objective is reached
	FY 1993 Actual	FY 1994 Budgeted	FY 1995 Planned	FY 1996 Planned	
JDAM (Air Force and Navy) RDT&E	46.3	107.6	155.6	127.7	FY 2017
JSOW (Air Force and Navy) RDT&E	68.6	107.6	155.6	127.7	FY 2017
Procurement	—	—	—	25.7	
SFW (Navy) RDT&E	—	2.5	25.5	16.6	*
SFW (Air Force) Procurement	17.7	87.5	108.8	169.4	FY 2002
TSSAM (Air Force, Navy, and Army) RDT&E	*	383.2	230.3	130.0	*
Procurement	*	159.6	375.9	390.1	
* Information unavailable.					

DOMINATE THE INFORMATION SPHERE

The services are beginning to field a new generation of airborne reconnaissance and surveillance systems that can provide real-time information to a wide variety of users. The fast pace and increased lethality of battlefield operations dictates that collection of this information and transmission of the resulting intelligence, warning, C³I, and targeting data to combat forces be accomplished in a timely manner. Navy E-2 and Air Force E-3 forces — critical for airspace surveillance, warning, and fighter control — will have their primary sensors upgraded via the Group II and RSIP programs. In addition, E-3s will be fitted with a passive detection system, and the E-2s will receive cooperative engagement capabilities. Production of Air Force E-8C (JSTARS) radar surveillance aircraft and ground station modules will continue throughout the 1990s, greatly improving capabilities for detecting and tracking moving ground vehicles.

Plans call for improving many other airborne reconnaissance and surveillance systems (see Table V-17). The U-2R force will be equipped with new engines to improve aircraft

performance and extend the system's usable life. Two deployable ground stations also are being fielded to support the U-2R force. In addition, capabilities for satellite data relay and for linking satellite systems to multiple mobile ground stations may be improved. The RC-135V/W Rivet Joint force, which carries SIGINT sensors, will be upgraded to a single standardized configuration while an analysis of joint requirements and a possible follow-on system is conducted. Similarly, the EP-3E force of SIGINT aircraft will be upgraded to a standardized configuration pending completion of this analysis.

Table V-17

Airborne Reconnaissance Modernization Programs

	Current Dollars (Millions)				Year when procurement objective is reached
	FY 1993 Actual	FY 1994 Budgeted	FY 1995 Planned	FY 1996 Planned	
E-2C					
RDT&E	6.4	18.1	58.8	67.0	
Procurement	177.2	151.9	514.6	366.7	FY 2003
E-3					
RDT&E	63.0	85.0	85.6	66.7	Upgrades
Procurement	75.4	4.6	135.0	202.5	Continue
E-8					
RDT&E	313.5	283.0	190.0	171.0	
Procurement	575.0	560.0	564.2	517.6	FY 2002
U-2					
RDT&E	125.0	129.0	121.0	149.0	Upgrades
Procurement	336.0	277.0	243.0	227.0	Continue
F/A-18D					
RDT&E	14.0	29.4	59.4	22.3	
Procurement	0.0	0.0	0.0	20.0	FY 1999
Endurance UAV					
RDT&E	0.0	60.0	117.0	150.0	TBD
Procurement	—	—	—	—	
SRUAV					
RDT&E	27.0	82.0	37.0	22.0	
Procurement	210.0	60.0	220.0	203.0	FY 2004
CRUAV					
RDT&E	20.0	30.0	53.0	35.0	
Procurement	—	—	—	—	FY 2003

Note: TBD = To be determined.

The Department will make a major investment in UAV during the FYDP period. Procurement of the Short-Range UAV (SRUAV) continues. This system, which entered production in FY 1993, will be used by the Army, the Marine Corps, and the Navy. The SRUAV is a more capable follow-on to the Pioneer system acquired in the mid-1980s. Development of a smaller, Close-Range UAV (CRUAV) will be initiated in FY 1995 for lower-echelon ground force units. Both the short- and close-range UAV variants can provide users with continuous streams of real-time imagery. An interim, medium-altitude Endurance UAV system is being funded in FY 1994 as an advanced technology demonstration project. Requirements for a follow-on High-Altitude Long-Endurance (HALE) UAV will be defined in FY 1994-95, leading toward a system that could meet reconnaissance requirements in the next decade and beyond.

FY 1993 was a year of significant change for airborne reconnaissance. The Medium-Range UAV program was cancelled. In order to focus available resources on systems providing the most needed capabilities, the Navy has assumed the lead on the ATARS program. The U-2 program was transferred back to DoD from the National Foreign Intelligence Program (NFIP). And a new OSD management organization, the Defense Airborne Reconnaissance Program, was created to provide sustained oversight of reconnaissance systems and ensure that these systems are configured properly for joint operations.

Conclusion

Aviation forces are well suited to the challenges of the new security environment. The flexibility and global deployability that these forces provide ensure that they will be an early and critical component of future military operations. The force structure and acquisition initiatives planned for coming years will preserve the current high effectiveness of these forces, while making the selective enhancements needed to meet emerging challenges.

MOBILITY FORCES

Introduction

Mobility forces comprise the airlift and sealift forces that transport military personnel and materiel throughout the world. Airlift provides a flexible, responsive means of rapidly deploying and sustaining forces anywhere in the world, while sealift allows the deployment of very large forces. Aerial-refueling forces contribute to mobility by permitting the nonstop deployment of tactical air and bomber forces and by extending the range of airlift aircraft when en route bases are not available. In many instances, deploying forces are able to draw on equipment and materiel prepositioned near the location of a crisis, so prepositioning also is considered a mobility program. In operations ranging from humanitarian relief to armed combat, mobility forces enable the United States to deploy forces quickly and sustain them until their mission is complete. In the new security era, the drawdown in U.S. troop strength overseas and the increasing number of unstable situations abroad combine to place a high value on mobility forces.

Mobility Missions

Mobility forces play an essential role in responding to regional dangers and opportunities. They are a vital component of DoD's response to contingencies ranging from emergency evacuations of U.S. citizens to major regional conflicts. In peacetime, they contribute to overseas presence and humanitarian assistance missions.

MAJOR REGIONAL CONFLICTS

Deploying and supporting forces in two nearly simultaneous major regional conflicts are the missions now being used to size and structure mobility forces. To minimize the loss of lives and territory as well as the number of U.S. forces required to rapidly defeat an aggressor and retake captured territory, the rapid deployment of a large force may be necessary. Despite already considerable capability, Operation Desert Shield revealed that improvements were needed. Thus, intertheater mobility forces are one of the few parts of the force structure in which increases are being made.

Once a force is deployed, intratheater mobility forces move units to initial operating locations, support them, and redeploy them as necessary to meet operational demands. In addition, these forces perform specialized missions, such as airdrops and medical evacuations, search and rescue, and aerial refueling of combat aircraft. In some instances, the forces that provide these services will be reduced along with the combat forces they serve. In other cases, however, the United States will need as many or more intratheater mobility forces for regional contingencies, since host nations may not always be able to provide the level of transportation support that Europe — the most important theater in sizing tactical lift forces in the past — has been able to provide.

OVERSEAS PRESENCE

In the course of their own training, mobility forces move supplies on a regular basis to U.S. troops stationed overseas. Additionally, mobility forces are an integral part of military exercise

programs, which help train U.S. forces and those of friends and allies, signal the United States' interest in the security of nations and regions overseas, and demonstrate the nation's ability to move forces quickly to those areas. The prepositioning of equipment and materiel also is a strong symbol of U.S. commitment to particular nations or regions.

HUMANITARIAN ASSISTANCE

Mobility forces often are first on the scene with humanitarian assistance, bringing relief workers and supplies. Indeed, they may be the only military forces involved in such operations since assistance often is provided by civilian government agencies or private organizations. The ability to respond rapidly to crises worldwide is a key requirement of this mission, as is the ability to operate in austere environments. During 1993, for example, U.S. mobility forces continued to provide aid to the Somalian, Bosnian, and Iraqi Kurdish populations, as well as to republics of the former Soviet Union. They also responded to floods in the American Midwest and Nepal, and to an earthquake in India.

LIMITED INTERVENTION OPERATIONS

Whether U.S. forces are deployed for peacekeeping, peace enforcement, or other lesser intervention operations, mobility forces are likely to be involved both in the initial deployment and in sustaining the operation.

Mobility Objectives

During the Cold War, the United States prepositioned equipment and supplies in Europe to speed the delivery of U.S.-based reinforcements that would deploy there in time of war. Follow-on forces were to deploy by air and sea, assisted by a substantial contribution of sealift and some airlift support from the NATO allies. Beginning in the late 1970s, improvements were made in the ability to deploy U.S. forces to regions outside Europe where little or no peacetime presence was maintained and where uncertainty existed concerning allied assistance, at least initially, in a crisis. The studies used to structure mobility programs at that time focused on the defense of oil supplies in Southwest Asia (SWA) and included a scenario in which Iraq attacked countries on its southern border. Those studies recommended additions of airlift, sealift, and afloat prepositioning, most of which were accomplished during the 1980s. Experience in Operation Desert Shield taught that these enhancements were not enough, however. Had Iraq pressed its initial advantage and not been thwarted by air interdiction, it could have threatened directly the ports and airfields into which deployed forces would flow as well as major Saudi oil-producing facilities — vastly complicating the task facing the United States and its allies.

The Mobility Requirements Study (MRS), conducted during 1991 and sent to Congress in 1992, examined mobility requirements for the post-Cold War era. It considered scenarios involving major regional contingencies in SWA or Korea, concurrent contingencies in those locations, and lesser regional contingencies. To meet projected mobility needs, the study recommended acquisition of additional medium-speed sealift vessels and afloat prepositioning ships as well as enhancements to the ability to move forces to ports of embarkation in the United States. The

Bottom-Up Review reaffirmed the need for such enhancements and identified a need for additional prepositioning in SWA and Korea, to improve capabilities for very short-warning or nearly simultaneous contingencies.

The objectives of the Department's mobility program are to be able to field a three-brigade heavy Army division and its support, seven to eight Air Force fighter wings, and one to two Marine Corps brigade-equivalents in either SWA or Korea as an initial response; to deploy the remainder of a three-division heavy Army corps, the remainder of ten Air Force fighter wings, and additional Marine Corps forces in about one month; and to deploy the remaining forces necessary for a successful counterattack within the next six weeks. Should a second contingency begin before the first deployment is complete, U.S. airlift assets plus prepositioning in the second theater should enable fielding another Army division and its support plus associated fighter wings and Marine Corps forces in that location for the initial phase of the campaign. Additional sailings of sealift forces would complete the latter deployment.

Force Structure and Capabilities

The Department of Defense has a long-standing policy of relying on the commercial sector for transportation to the maximum extent that it can meet military requirements. Today, DoD depends almost entirely on the civil sector to move forces to ports of embarkation in the United States. Commercial aircraft provide most passenger airlift capacity and make a significant contribution to cargo airlift, while commercial shipping provides most of the capacity to move containerizable cargo by sea. There are, however, certain essential capabilities that the civil sector cannot provide. The Department maintains military mobility forces to obtain those capabilities and to carry out missions in circumstances where the commercial sector cannot respond at all or cannot do so quickly enough.

AIRLIFT

The Civil Reserve Air Fleet (CRAF) consists of passenger and cargo aircraft that commercial carriers have agreed to make available for DoD's use in times of crisis. In return for their participation in CRAF, carriers are given preference for DoD's peacetime passenger and cargo business and are guaranteed that the burden of carrying out a deployment will be spread fairly among all participants. New contracts for participation were signed in October 1993.

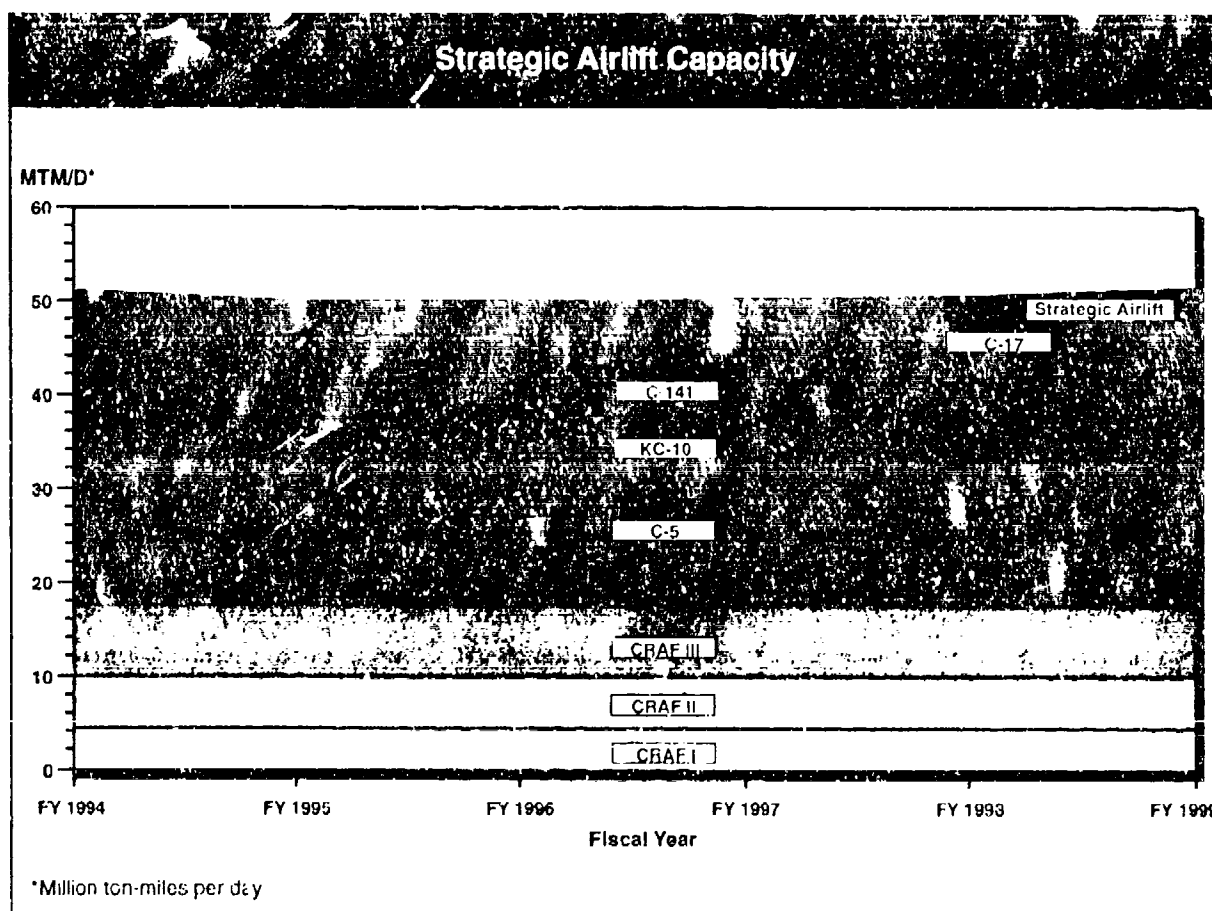
Calling up CRAF Stage I aircraft provides DoD access to about 9 percent of the passenger capacity in the long-range U.S. commercial fleet and 21 percent of the cargo capacity. Stage I can be called up by the Commander in Chief of the U.S. Transportation Command (CINCTRANS). Stage II is called by CINCTRANS, with the approval of the Secretary of Defense. Once Stage II is called, DoD would have access to about 26 percent of the passenger capacity and 51 percent of the cargo capacity in the long-range U.S. commercial fleet. Use of Stage III of CRAF requires a declaration of national emergency by the President or Congress. The Department would not plan to call Stage III unless faced with concurrent major regional contingencies, since the aircraft that would be employed constitute about 37 percent of the passenger capacity and almost 76 percent of the cargo capacity in the long-range U.S. commercial fleet.

Although civil aircraft provide important capabilities, there are some essential characteristics they do not have. Most importantly, they cannot carry the full range of military equipment. Of the cargo that would have to be moved by air in a major regional contingency (including bulk cargo), only about 45 percent of the total tonnage would fit into the largest commercial cargo aircraft. Smaller aircraft could load only about 35 percent. Examples of equipment that cannot be accommodated in commercial aircraft are tanks, air defense weapons, many helicopters, and most trucks. Additionally, civil aircraft cannot air-drop cargo or personnel or provide specialized capabilities, such as the very rapid off-load required in combat situations. Commercial planes also require relatively long runways and specialized material-handling equipment.

Military airlift aircraft provide the full range of these capabilities. Today's military airlift fleet includes 109 PAA C-5s, 214 PAA C-141s, and 382 PAA C-130s. These aircraft are assigned to both active and reserve squadrons. The active squadrons of C-5s and C-141s have both active and reserve associate crews. For lesser regional contingencies, humanitarian assistance, and peacekeeping operations, only active-duty crews and reserve crews serving on a voluntary basis might be available. As forces are drawn down, the C-130 fleet will be reduced to 388 PAA by the end of FY 1995. The C-5 fleet will be reduced to 104 PAA in FY 1995 to provide back-up aircraft to cover the depot maintenance cycle.

C-141s are nearing the end of their projected service life; indeed, a significant inspection and repair program is under way to keep these aircraft in operation until they can be replaced. Last year, the wing on a C-141 was disassembled and examined in support of a review conducted by an Air Force Scientific Advisory Board. Damage found during that test and in a subsequent examination of the entire fleet has resulted in the grounding of about a quarter of the planes and the imposition of restrictions on the payloads of the remainder. However, the C-141 fleet is anticipated to be completely repaired and returned to unrestricted service by December 1994. Additionally, the estimated cost of a Service Life Extension Program (SLEP), which had been considered as an alternative to replacement, has grown to the point that a SLEP clearly is not competitive with any of the replacement options. Thus, replacement of the C-141 remains an urgent requirement.

The chart below shows the contribution of each source of intertheater airlift to total U.S. capacity today and through the end of the program period. Military airlift capacity is shown by CRAF stage and aircraft type.



AERIAL REFUELING

For FY 1994, the aerial refueling fleet consists of 489 PAA KC-135s and 57 PAA KC-10s. These aircraft support the deployment and employment of conventional forces, with the KC-135 force also providing airborne refueling support for nuclear bombers. The KC-10 and KC-135 can also carry cargo, with the former aircraft possessing a significant capability to perform airlift and tanker missions simultaneously. To account for the KC-10's dual mission capability, the chart above displays the cargo capacity of 23 KC-10 aircraft used in an airlift role.

Table V-18 shows the current and projected inventory of long-range tankers. In addition to these aircraft, the Navy and Marine Corps maintain tactical and multimission aircraft (discussed in the aviation forces section) that can serve as tankers to support fighter employment.

Table V-18 Long-Range Tanker Aircraft (PAA)				
	FY 1993	FY 1994	FY 1995	FY 1996
KC-10	57	57	54	54
KC-135 ^a	489	489	478 ^b	475 ^b
^a Includes active and reserve components. ^b The reduction in aircraft reflects transfers from the operational inventory to meet training and depot maintenance needs.				

SEALIFT

Sealift capacity comes from three sources: ships operating in commercial trade; commercial ships under long-term charter to the Department; and government-owned ships maintained in reserve status. These vessels provide three primary types of capacity: container capacity, which is useful primarily for moving supplies; roll-on/roll-off (RO/RO) capacity (measured in square footage), which is needed for moving equipment; and tanker capacity, for fuels. Afloat prepositioning ships also can be used to move units after they have discharged their initial cargoes. In addition, the older break-bulk ships in the inventory can move both military equipment and supplies.

The U.S.-flag commercial fleet contains 247 ships with military utility. These include 24 dry cargo ships and 88 tankers operating in domestic trade (under the Jones Act) plus 100 dry cargo ships and 35 tankers operating in international trade. Additionally, there are 47 militarily-useful dry cargo ships and 76 militarily-useful tankers in the effective U.S. control (EUSC) fleet. EUSC ships are owned by U.S. companies or their foreign subsidiaries and registered in nations whose laws do not preclude requisitioning the ships. Although DoD would prefer to use U.S.-flag ships with U.S. crews, much of the available tanker capacity is in the EUSC fleet. To facilitate access to these vessels in a crisis, the Department of Transportation (DOT) implemented a Voluntary Tanker Agreement with ship owners. This year, following an interagency review of maritime policy, the President decided to start a new program to provide assistance to U.S.-flag ships engaged in international trade. The program has the dual objectives of providing sealift for defense purposes and ensuring a viable U.S.-flag presence in international trade.

Currently, DoD is chartering 10 dry cargo ships and 15 tankers from commercial operators to transport military cargoes to locations not accessible by regular commercial service. The number of ships under charter for these purposes varies little from year to year.

For more than a decade now, the proportion of containerships in the commercial fleet has been increasing. Although these ships are well suited to the movement of most military supplies and munitions, they cannot carry most types of unit equipment without the installation of adaptive

devices. Even with those devices, the time required to deploy unit equipment in containerships taken from trade can be half again as long as that required on government-owned RO/RO ships — a delay that is militarily unacceptable. Therefore, to meet the very demanding unit deployment timetables of regional contingencies, it is necessary to acquire RO/RO and similar ships and maintain them in high-readiness reserve status.

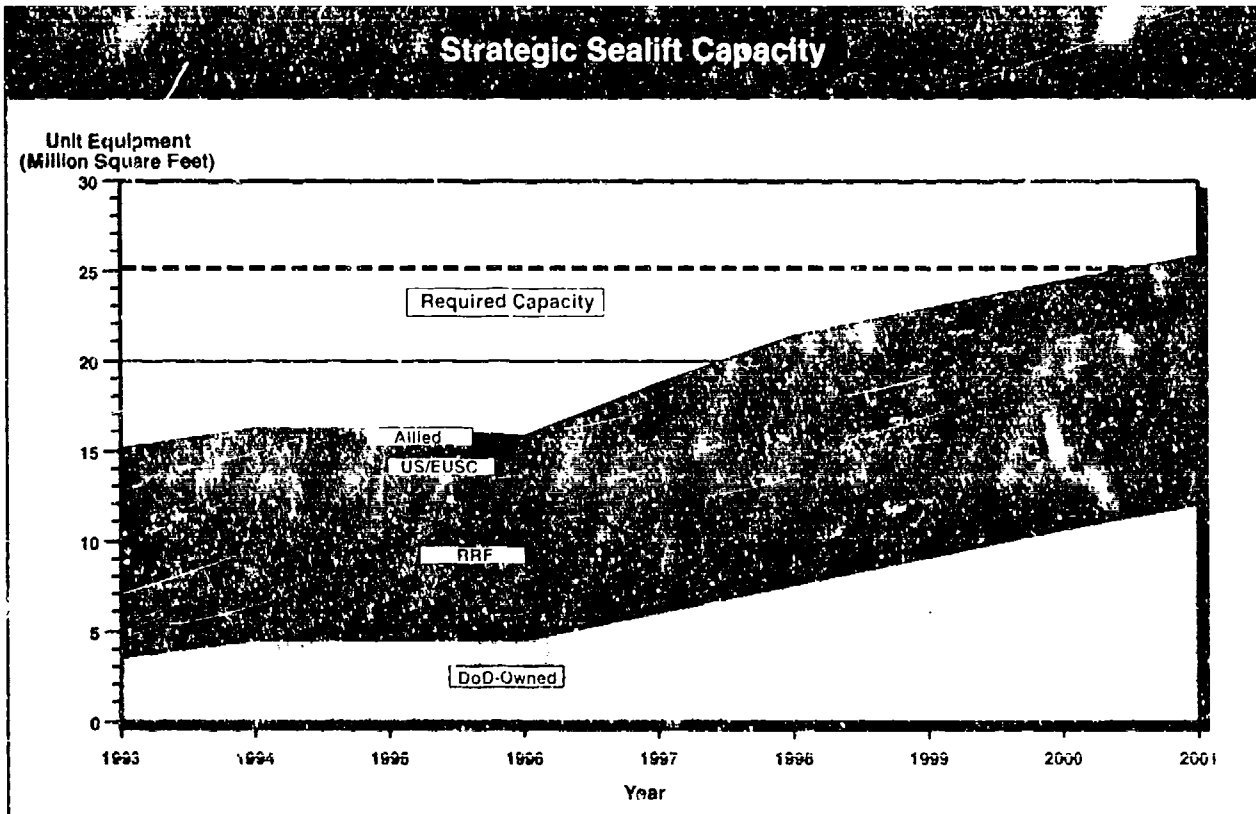
Today, the government maintains 98 dry cargo ships and 11 tankers in reserve status for use in deploying and sustaining forces:

- Eight are fast sealift ships (high-speed RO/ROs) bought during the early 1980s and maintained with partial crews so that they can be available for loading in two to four days. These ships are funded and operated by DoD.
- Two are aviation support ships — floating maintenance depots — and another two are hospital ships, all capable of full operation in five days. These ships also are funded and operated by DoD.
- The remaining 86 dry cargo ships and the 11 tankers are in the Ready Reserve Force (RRF), which is funded and operated by the Maritime Administration (MARAD) within DOT.

Most of these ships were used in Operation Desert Shield and were returned to reserve status during 1992.

Since Operation Desert Shield, the Department has added 12 RO/RO ships to the fleet, toward an increase of 19 notional ships recommended by the MRS. Funding available from prior years likely will permit procurement of four more; the final three are expected to be acquired in the next several years. In addition, 19 large, medium-speed RO/ROs (LMSRs) are being added to DoD's inventory. Eleven of these ships will be used to meet goals established by the MRS for surge sealift, and the remainder will be used for afloat prepositioning.

The chart below shows the contribution of each source of sealift to move unit equipment today and through the end of the program period. Also shown is the RO/RO capacity (square footage) recommended in the MRS for the deployment of forces in concurrent MRCs. As mentioned earlier, commercial ships can be used to move most sustainment cargoes. Today, the U.S.-flag and EUSC fleets have more than twice the capacity needed to meet the sustainment demands of two nearly simultaneous MRCs. That level of capacity is expected to be maintained with the help of the new Maritime Security Program and new construction.



PREPOSITIONING

The Department prepositions unit equipment and war reserve materiel afloat and ashore at key locations overseas to increase the number of forces that can be deployed and supported quickly with available airlift.

This year, DoD is using 35 ships for afloat prepositioning. Of these, 25 have been chartered from the commercial fleet and 10 come from the RRF:

- Thirteen of the chartered ships are Maritime Prepositioning Ships (MPS), which were built or modified in the mid-1980s specifically for the prepositioning of Marine Corps equipment and supplies. These ships are organized into three squadrons, each supporting a brigade-equivalent force capability. The ships routinely have been deployed in the western Pacific, Indian, and Atlantic Oceans, from which they could quickly be dispatched to the scene of a crisis, remaining offshore until a decision is made to deploy troops. All three squadrons were used in Operation Desert Shield and have been fully reconstituted.
- Eight RRF ships (plus two chartered ships to be available later this year) carry equipment and supplies for a heavy Army brigade, as recommended

in the MRS. The RRF ships will be returned to reserve status when LMSRs being procured for afloat prepositioning are delivered.

- The remaining 12 ships carry munitions, medical material, fuel, equipment to permit the discharge of petroleum from tankers offshore, and equipment for units required early in a deployment.

Prior to Operation Desert Shield, the Army had prepositioned equipment in central Europe for six heavy brigades, an armored cavalry regiment, and supporting units. The Air Force had prepositioned in SWA common items for the support of 15 tactical and support squadrons. War reserve materiel also was prepositioned in Europe, in SWA, and throughout the Pacific for forces based or deployed there and for early-deploying units. Much of this equipment and materiel was used in the Persian Gulf deployment or was drawn on for subsequent force sustainment. Some is being reconstituted, but prepositioning programs also are being reconfigured to reflect post-Cold War needs.

Increasing Capabilities to Meet Future Challenges

AIRLIFT PROGRAMS

The MRS recommended continuing the C-17 program. Since the publication of that study, however, the C-17 program has come under increased scrutiny by the Department and Congress. Last spring, the Under Secretary of Defense for Acquisition and Technology convened a Defense Science Board (DSB) inquiry into the technical and managerial aspects of the program. As a result of the DSB recommendations and a lengthy Defense Acquisition Board (DAB) review, McDonnell-Douglas and the Department have reached a comprehensive settlement on outstanding C-17 issues. DoD has agreed to accept up to a total of 40 C-17 aircraft until McDonnell-Douglas demonstrates production scheduling reliability, performance in accordance with contract specifications, and acceptable reliability and maintainability standards. The extensive DAB process also examined the congressionally-mandated C-17 cost and operational effectiveness analysis (COEA) performed by the Institute for Defense Analyses. Congress required the Federally Funded Research and Development Center to examine the cost-effectiveness of the C-17 as well as alternatives to it, including the C-5, a C-141 Service Life Extension Program, and the potential contribution of commercial derivative aircraft. The COEA concluded that while commercial derivative aircraft have significant potential, particularly for operations in theaters with robust infrastructures, the C-17 remains the most militarily flexible alternative.

As a result of the review of the C-17 program, the Department is taking three steps to meet military airlift requirements. First, the test and evaluation of the C-17 program will be completed. Ten C-17s have been delivered to date. These aircraft are being used for the test program and for training aircrews and maintenance personnel. Program testing — including an assessment of reliability, maintainability, and availability — will be completed in 1995. Second, the Department is beginning a program for a nondevelopmental airlift aircraft (NDAA). Under this program, the Air Force will conduct a competition for an aircraft incorporating an existing design — a C-5 or commercial wide-body derivative — that can meet military airlift

requirements. The results of that competition will also be complete in 1995. Third, the Department is updating the Mobility Requirements Study to expand the analysis of alternative levels of airlift and investigate a range of assumptions concerning the infrastructure available to support airlift operations. The updated MRS analysis will form the basis for the statement of airlift requirements that will be used in the NDAA competition.

The C-17 and NDAA will be evaluated in a single, integrated decision process early in FY 1996. At that time, the C-17 testing and performance assessment will be complete and the costs and capabilities of potential commercial derivative aircraft will have been fully explored in the NDAA competition. The detailed statement of airlift requirements derived from the updated MRS will serve as the basis for the evaluation of airlift alternatives.

SEALIFT AND AFLOAT PREPOSITIONING PROGRAMS

Between 1990 and 1993, Congress appropriated \$2.5 billion for procurement of sealift vessels. The MRS recommended acquiring LMSRs both to preposition equipment for a heavy Army brigade and to augment existing sealift capacity, in order to meet the objective of deploying a heavy Army corps in no more than a month's time. Last summer, contracts were awarded to modify five existing ships to the LMSR design; two contracts also were awarded for construction of new LMSRs. Each of the latter contracts was for one ship, with options for five more. Two additional ships will complete the fleet expansion recommended by the MRS. The FY 1995-99 program includes \$3.1 billion for this purpose. The modified ships will be used for prepositioning until new ships are available; at that time, they will be put into reserve status to maximize their service life.

Experience in Operation Desert Shield taught that past maintenance procedures and funding for the RRF were inadequate to meet readiness goals. With even more stringent future readiness objectives recommended by the MRS, more extensive maintenance programs will be necessary. Because most RRF ships were used during Operation Desert Shield and returned to storage in a high state of readiness, it was not necessary to increase funding immediately to implement these programs. For FY 1995 and beyond, MARAD, working closely with C NCTrans, has proposed a fiscally conservative maintenance program that achieves MRS-recommended readiness objectives through periodic activations, the assignment of maintenance crews to the ships, and renegotiated ship manager contracts.

PROGRAMS FOR PREPOSITIONING ASHORE

The Army is in the process of restructuring its unit equipment prepositioning worldwide. Four heavy brigade sets of prepositioned equipment are being reconstituted in central Europe. These will ensure the ability to meet U.S. commitments to NATO's multinational corps and rapid reaction forces. A fifth brigade set is in Italy, where it is available for use on NATO's southern flank or elsewhere in the region. In SWA, the battalion set of equipment already in Kuwait is being expanded to brigade size. Negotiations are under way with another nation in the region to preposition a second brigade and nondivisional support. These two sets, in combination with the brigade set afloat, will provide the capability to deploy an entire heavy division rapidly. Negotiations also are under way with the Republic of Korea to preposition equipment for a

heavy brigade so that a full division could quickly be fielded there. The Department is seeking allied or alliance funding for all prepositioning projects. Projects in Europe are eligible for some support from the NATO Infrastructure Fund, but the United States must contribute its full share to the fund if these and other high-priority projects are to receive financing.

Conclusion

A robust mobility capability is essential to meeting post-Cold War demands with fewer forces and a reduced permanent forward presence. The FY 1995-99 program continues the long-standing partnership between the Department of Defense and the transportation industry, depending primarily on the private sector for the capabilities it can provide and using defense funds to buy capabilities that have little or no commercial utility. In combination, DoD's programs and those of DOT for the RRF and the commercial fleet ensure that the United States will be able to respond promptly and effectively in situations ranging from natural disaster to major war.

SPECIAL OPERATIONS FORCES

Introduction

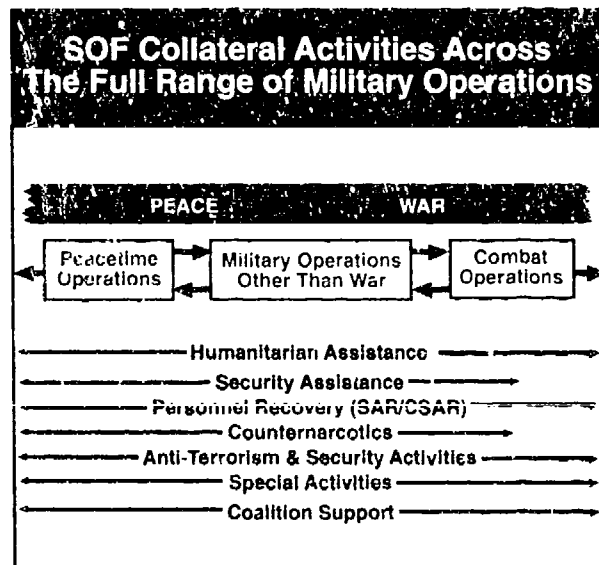
Special Operations Forces (SOF) serve three strategic purposes that will be increasingly important in the post-Cold War world: (1) they expand the range of options available to decisionmakers confronting crises and conflicts below the threshold of war, such as terrorism, insurgency, subversion, and sabotage; (2) they act as force multipliers in support of conventional forces engaged in major conflicts, thereby increasing the effectiveness and efficiency of the overall U.S. military effort; and (3) they provide unique capabilities for conducting activities in support of benign, noncombat missions such as humanitarian and security assistance.

SOF's Heritage: Roles and Missions

SOF have a dual heritage. They are the most preeminent surgical penetration and strike force, able to respond to specialized contingencies across the conflict spectrum with stealth, speed, and precision. They are also warrior-diplomats capable of influencing, advising, training, and conducting operations with foreign forces, officials, and populations. One of these two generic SOF roles is at the heart of each of the SOF missions, as well as associated collateral activities, which comprise the SOF range of missions.

- Foreign Internal Defense (FID). SOF train, advise, and assist host nation military, paramilitary, and on occasion civilian forces, in support of programs designed to free and protect a society from subversion, lawlessness, and insurgency.
- Special Reconnaissance (SR). SR complements national and theater intelligence collection systems by obtaining specific, well-defined, and time-sensitive information of strategic or operational significance.
- Direct Action (DA). In pursuit of important targets located within hostile or denied territory, SOF units may employ raid, ambush, or direct assault tactics.
- Counterterrorism (CT). The primary mission of SOF in this interagency activity is to apply highly specialized capabilities to preempt or resolve terrorist incidents abroad.
- Unconventional Warfare (UW). UW involves SOF working with assistance from indigenous forces in the interrelated fields of guerrilla warfare, subversion, sabotage, intelligence collection, escape and evasion, and other low visibility, covert, or clandestine operations behind enemy lines or in politically sensitive territory.
- Civil Affairs (CA). CA involve coordinating U.S. military activities with foreign civilian officials, foreign civilian populations, U.S. government civilian agencies, and nongovernmental organizations.

- Psychological Operations (PSYOP). PSYOP activities are directed toward foreign audiences and are intended to influence attitudes and behavior.
- Associated Collateral Activities. Missions such as security assistance, support to counterdrug operations, humanitarian assistance/disaster relief, personnel recovery, peacekeeping, and counterproliferation are areas where SOF share responsibility with other forces as directed by regional CINCs.



SOF's Role in Support of Defense Strategy

SOF will continue to provide strategic utility, and undertake their traditional, additional and collateral missions in the post-Cold War world. Because of their very nature, SOF will need fewer modifications than most forces which have trained primarily for conventional missions. However, there will be some shift in mission emphasis as SOF are oriented to the newly identified dangers: the proliferation of weapons of mass destruction (WMD), regional aggressors, and threats to democracy. Increasing attention also will be given to training in nonlethal techniques and support of peacekeeping, humanitarian assistance, and disaster relief operations.

SOF and the Dangers Posed by Weapons of Mass Destruction

The proliferation of WMD — nuclear, biological, and chemical weapons and their delivery systems — is one of the most serious security threats that the United States, its allies, and friends confront in the post-Cold War era. When U.S. forces are faced with a discrete theater WMD threat, SOF can assist in the three elemental options of deterring, destroying, or defending

against it. SOF direct action capabilities contribute to deterrence and destruction options by providing a precision strike capability against completed weapons, storage facilities, and command and control nodes. SOF special reconnaissance capabilities can contribute to the defense against WMD threats by providing real-time intelligence unavailable from overhead systems.

SOF and Regional Dangers — Large-Scale Aggression

SOF are force multipliers for U.S. conventional forces combatting large-scale regional aggression, contributing directly to conventional combat operations, complicating enemy operations through assistance to indigenous forces allied with the United States, and sealing the victory through post-hostility and restoration activities. In Operation Desert Storm, for example, SOF conducted special reconnaissance, direct action, and other missions behind Iraqi lines which contributed to deception operations that misled the enemy about the coalition's operational plan. According to information obtained from prisoners of war, psychological operations leaflets and broadcasts were responsible for a large number of enemy defections and surrenders. Active and Reserve component CA units processed and managed displaced person and refugee operations and distributed humanitarian assistance, supplies, and services. Reserve CA also assisted ministries of the Government of Kuwait in planning for the immediate post-conflict restoration of Kuwait.

SOF are particularly well suited to conventional coalition warfare. One SOF contribution to the Operation Desert Storm campaign was to extend the command and control system from the Coalition headquarters to all national elements in the field.

By providing command, control, and intelligence information to their host commanders, 134 SOF teams ensured coherent, unified action before, during, and after hostilities. General Schwarzkopf referred to this SOF contribution as the glue that held the coalition together. The application of SOF to this regional contingency was accomplished despite considerable procedural and organizational problems; the planning and execution of future conventional war plans must be more cognizant of the applicability of SOF.

SOF and Regional Dangers — Low-Intensity Conflict

SOF has an important role to play in low-intensity conflict both because of the unique capabilities resident in SOF and because of the special character of low-intensity conflicts. These activities are not focused on traditional, conventional military objectives. They are not driven by the requirement to destroy enemy forces or capture terrain, but rather by the need to change an adversary's policy without resorting to the expense and risk of war. If the United States treats these activities as merely scaled-down versions of conventional war, not heeding their special character, it will not succeed, or succeed only at a great cost in lives and resources.

Low-intensity conflict will continue to concern the United States. Terrorism, subversion, insurgency, and coups d'état are likely to be some of the principal means by which national and subnational actors carve out their places in the post-Cold War world. Such activities may be

used to weaken regional security by undermining support for U.S. presence, reducing U.S. access and influence, complicating the coordination of collective defense efforts, or directly attacking Americans, allies, or regimes friendly to the United States. To respond to these threats, the U.S. cannot rely only on a well-honed conventional military capability which can be unleashed when its vital interests are directly threatened.

In addition to responding to these dangers, U.S. low-intensity conflict capabilities allow one to take advantage of the opportunities that are now before the nation, such as spreading the benefits of democracy and free trade to an extent that would have seemed unimaginable only a few years ago. Conflict resolution, disarming, and restoration skills will be important in this regard, allowing the U.S. to support selected peacekeeping and peace enforcement missions, just as a security assistance surge, or a small application or show of force may help shore up an emerging democratic regime.

Success in any of these activities requires that the U.S. emphasize approaches and capabilities different from those that dominate warfighting. Low-intensity conflict requires a scenario-specific, balanced, and integrated application of all elements of U.S. national power.

SOF and the Challenges of Democratization

Many of the skills in the SOF inventory are directly applicable to support friendly, democratic regimes. Due to their linguistic ability and cross-cultural sensitivities, they can quickly establish an effective working rapport with foreign military and paramilitary forces and, when required, government officials. Some activities which SOF (especially Civil Affairs, Psychological Operations, and Special Forces (SF)) can pursue in democratization support missions are assessments of appropriate host nation projects, disaster assistance or humanitarian assistance planning seminars, interagency coordination, foreign liaison, and public information programs.

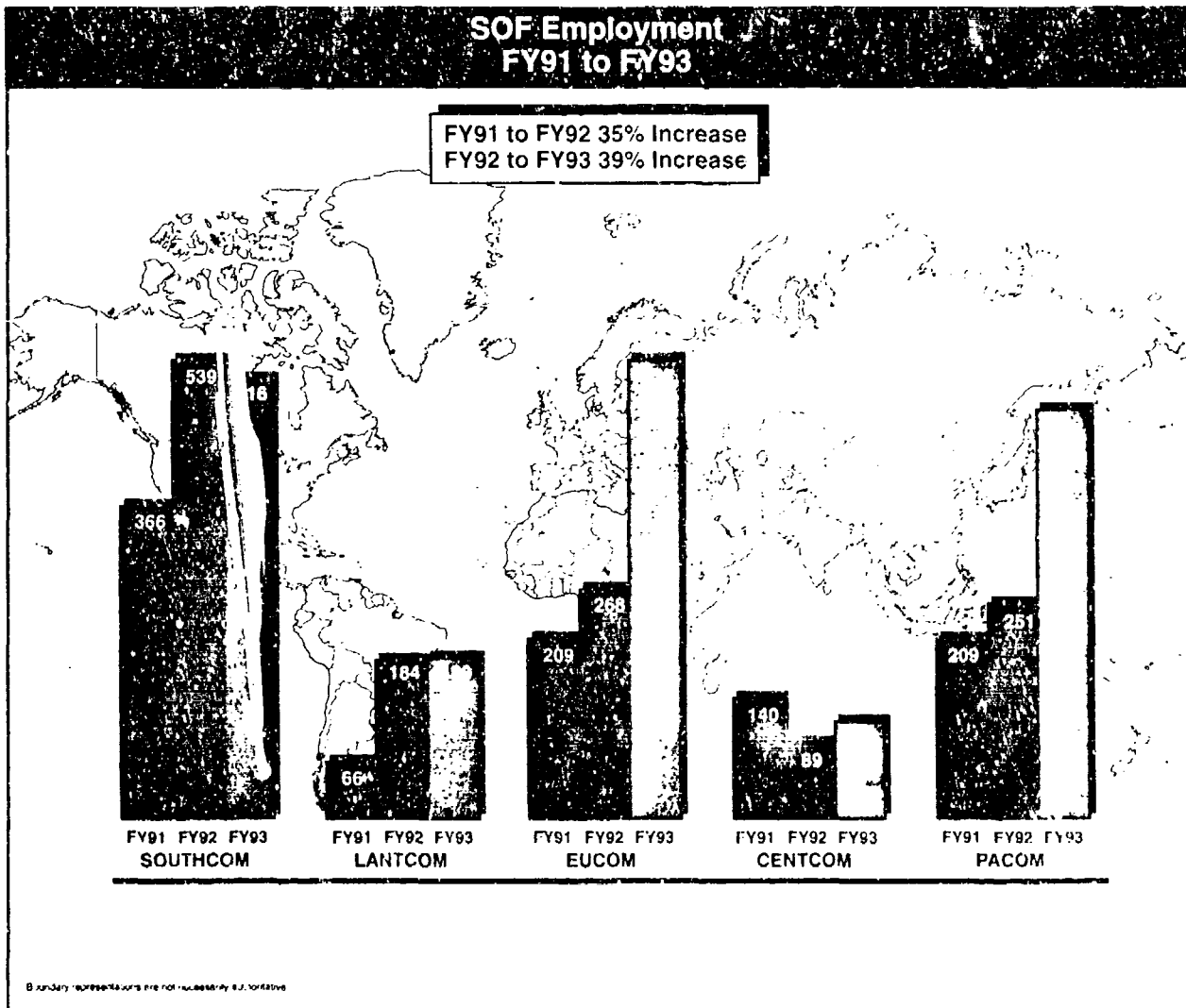
Some military units, especially combat support and combat service support units, such as engineer or medical units, and even some civilian agencies would benefit from having civil affairs, psychological operations, or special forces personnel attached for overseas peacetime missions. Prior to deployment, they can train members in the cultural aspects of their projects and how to deal with local military officials and civilians they may come into contact with. During deployment, SOF can assist them in coordinating with local representatives and population.

Defining Appropriate SOF Missions and Ensuring Maximum Effectiveness

To realize their full potential as strategic assets, SOF require national level oversight and must be fully integrated into both conventional operations and interagency planning. Since historically SOF have been under or overvalued, national level oversight of special operations is required to ensure that they are employed to maximum effectiveness. Understanding the qualities that make Special Operations Forces unique is critical to identifying precisely how changes in the security environment and defense policy affect SOF, and to evaluating the importance and appropriateness of newly emerging missions and activities. Special operations differ from

conventional operations in degree of physical and political risk, operational techniques, mode of employment (covert or clandestine vice covert), independence from friendly support, and dependence on detailed intelligence and indigenous assets.

In larger-scale conflicts, special operations forces, like airpower, armored and infantry divisions, or naval forces, are most effective when matched with complementary capabilities. Skillful integration of SOF with conventional forces will allow SOF to fulfill their force multiplier function in conventional operations. DoD needs to improve SOF interoperability with conventional forces and ensure their inclusion in strategic planning, joint training, interagency exercises, and DoD educational curricula.



In low-intensity conflicts, SOF have particular advantages, but the complex nature of such an environment demands careful planning and interagency coordination. Since higher profile direct action missions can entail great risk, if unsuccessful, they can exacerbate the situation, negate

political advantages, or lose U.S. credibility. SOF must move beyond jointness to provide the extra options that SOF give decisionmakers looking for more imaginative solutions in the political-military environment short of war. Virtually all future SOF operations, with the exception of some conducted in wartime support of conventional operations, will have to be intimately coordinated with other U.S. government agencies.

Current and Recent Operations

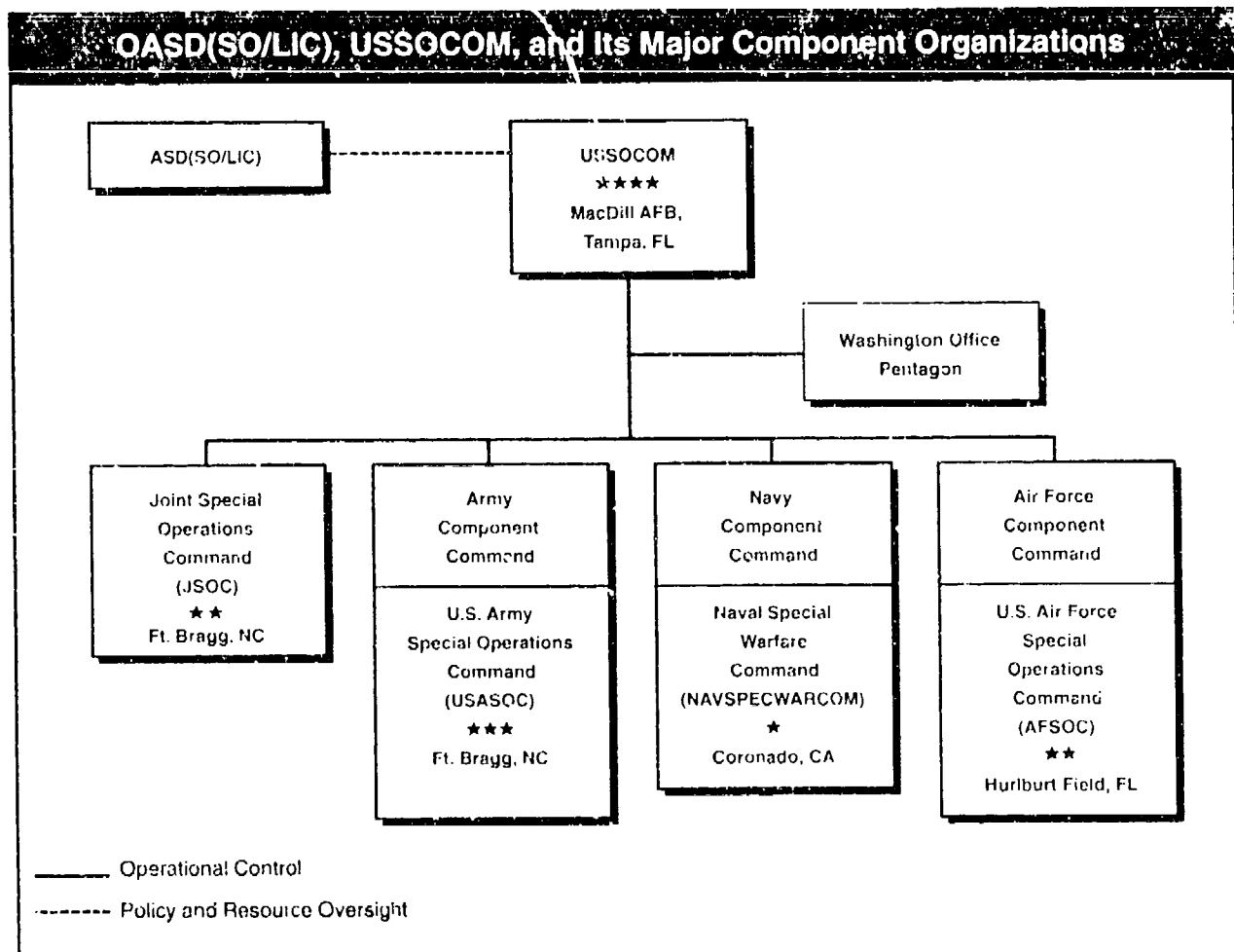
The sensitivity of special operations precludes a specific discussion of most SOF activities in this report. However, examples of some recent operations include the following:

- SOF continue to support the U.S. Central Command in Saudi Arabia and Kuwait with training missions. Additionally, elements of SOF provided specific assistance to the United Nations weapons and munitions (chemical, biological and nuclear) inspection effort in Iraq.
- When the plight of the Kurdish refugees in Northern Iraq compelled the international community to provide humanitarian assistance, SOF activities in Operations Provide Comfort I and II and Poised Hammer (October 1991 to September 1992), supported relief activities from Turkey and provided a capability for direct action missions if called upon. Similar relief was provided to starving refugees in Somalia during Operation Provide Relief (August 1992 to January 1993) while supporting the UNITAF humanitarian mission.
- In the enforcement mission in Somalia -- UNITAF (November 1992 to January 1993) -- SOF provided liaison support to the various coalition participants engaged in stabilization operations.
- SOF provided Task Force Ranger composed of various SOF capabilities, while various SOF personnel formed part of the Quick Reaction Force, to UNOSOM II. CA and PSYOP forces supported Joint Task Force Somalia, and the U.N. Command and Logistics Support Command by coordinating military civil action projects and humanitarian assistance efforts, facilitating development of local government councils, and conducting public information programs.
- During Operation Provide Hope (April to September 1992), SOF provided humanitarian assistance to Russia and other areas of the former Soviet Union.
- During Provide Promise (July 1992 to Present), SOF assisted the UN-sponsored humanitarian effort in the former Yugoslavia.
- PSYOP and Civil Affairs specialists are assisting military planners in USEUCOM in contingency planning for various potential democratization support missions.
- During Support Justice IV (September 1992 to September 1993) and the current follow-on operations, SOF conducted counterdrug operations in

Latin America in support of the U.S. drug law enforcement agencies. SOF trained and provided expert advice to host-nation armed forces dedicated to the counterdrug mission, primarily through exercises, joint planning and assistance teams, and mobile training teams. SOF teams conducted over 230 counterdrug missions in support of the Drug Enforcement Agency, the U.S. Information Agency, and the State Department's Narcotics Assistance Staff.

The most telling benchmark for indicating the ambitious operations tempo for SOF aggressiveness in 1993 is the high operational tempo of overseas deployments: SOF conducted over 947 deployments (13,454 personnel) to 101 countries to accomplish tasks in their primary mission areas.

The chart below depicts the relationships among the Office of the Assistant Secretary of Defense (Special Operations/Low-Intensity Conflict) (OASD(SO/LIC)), U.S. Special Operations Command (USSOCOM), and its component organization of SOF and their major locations.



Force Structure

SOF are prepared to operate worldwide and across the spectrum of conflict. Approximately 43,000 active and reserve SOF personnel forces from the Army, Navy, and Air Force are assigned to USSOCOM. They are organized into three service components and a joint command. In actual operations, service component units are normally employed in joint task forces tailored for specific missions.

Army Special Operations Forces are comprised of Special Forces (Green Beret), Ranger, Special Operations Aviation (SOA), PSYOP, CA, Signal, Support, and Headquarters units under U.S. Army Special Operations Command (USASOC). The Special Forces are organized into five active and four (soon to be two) reserve SF Groups. The Ranger regiment is comprised of three battalions, based at three locations across the United States, and a headquarters company. SOA is comprised of one active regiment in the United States, one detachment in Panama, and one National Guard battalion. PSYOP is organized into three PSYOP groups, one active and two reserve. The CA force is 97 percent reserve and consists of 36 units which are regionally aligned.

Naval Special Warfare (NSW) forces support naval and joint special operations within the theater unified commands. NSW is organized into SEAL teams, consisting of 10 16-man platoons, SEAL Delivery Vehicle Teams, Special Boat Squadrons and Special Boat Units, and small command and control elements located outside the continental United States (CONUS) to support other NSW forces assigned to theater Special Operation Commands or components of naval task forces.

Air Force SOF is organized into one active Special Operations Wing, two active Special Operations Groups (one each in Pacific and European Commands), one reserve Special Operations Wing, one reserve Special Operations Group, and one active Special Tactics Group. These units perform long-range infiltration, resupply, or exfiltration missions deep within sensitive or enemy held territory. They can also conduct PSYOP leaflet drops, broadcast radio or television signals, and deliver 15,000 pound BLU-82 bombs (as demonstrated during Operation Desert Storm), in addition to providing close air support, interdiction, and armed escort capabilities. These aircraft support both SOF and conventional forces.

SOF Themes for the Future

Nine themes will guide the SOF community during the decade of the 1990s:

- Ensure maximum flexibility consistent with full accountability. SOF missions are often fluid, being shaped by political context and tactical developments requiring modifications and expediences. Nevertheless, adherence to rules of engagement and responsiveness to military and civilian authority are paramount.
- Encourage unorthodox approaches and unconventional techniques that bring typically American virtues such as independence, innovation, and initiative to work on security challenges.

- Continue investing in science and technology.
- Maintain technical superiority in weaponry, materiel, and delivery systems.
- Prepare for the kinds of conflicts (terrorism, insurgency, subversion, sabotage, etc.) which religious, ethnic, and nationalistic movements are likely to spawn.
- Stress SOF applicability for forward-basing, deployability, and regional orientation.
- Integrate SOF more fully with conventional forces and other U.S. government agencies.
- Design force structure to reflect the proper mix of the SOF missions areas. Future special operations missions and activities will require greater specialization in training and force structure. The physical and technical requirements of operations will increase with the sophistication of adversaries, and the linguistic, cultural, and political needs of the training and advisory mission will increase as the regional security environment becomes more complex.
- Assure appropriate missions are tasked to SOF. Special operations have key elements that distinguish them from conventional operations; the utility of SOF increasingly hinges upon regional knowledge, flexibility, political awareness, and discipline.

Conclusion

SOF are particularly suited to many new activities which will flow from the national security strategy. Many of these missions require traditional SOF capabilities while others such as peacekeeping, peace enforcement, counterproliferation, and democratization are relatively new and are the subject of developing SOF doctrine. However, the late 1980s and early 1990s have proven that SOF are invaluable as facilitators and peacetime operators, as well as premier strike troops. In order to be as effective as possible, SOF face two major challenges: they must integrate — with conventional forces, other U.S. agencies, friendly foreign forces, and other international organizations (United Nations, Red Cross, etc.) — while preserving an element of autonomy necessary to protect and encourage the unconventional approach that is the soul of special operations. This interoperability will facilitate the other major challenge of the 1990s — to modify capabilities and perceptions to enable SOF to conduct operations successfully in support of peacetime objectives.

SPACE FORCES

Introduction

The United States conducts activities in space necessary for national security in the post-Cold War era. DoD space policy recognizes space as a medium, like the land, sea, and atmosphere, within which military operations can take place in support of U.S. national security objectives. DoD space forces consist of space and terrestrial systems, equipment, facilities, organizations, and personnel necessary to exploit and, if required, control space for national security.

Achieving U.S. national security objectives in the most effective and efficient way requires that the capabilities of space forces be fully utilized for national defense. The Persian Gulf conflict of 1991 and other recent contingencies demonstrated that space forces are fundamental to fighting and decisively winning wars. Consequently, space forces will play important roles in helping to counter the new dangers which could threaten U.S. national security interests now and in the future and assist in the successful execution of national security strategy and national military strategy.

In particular, space systems provide force multipliers that are increasingly important for sustaining an effective level of U.S. defense capability as overall force structure is downsized and restructured. Space forces meet a wide range of requirements critical to the National Command Authorities (NCA), combatant commanders, and operational forces. The global coverage, high readiness, non-intrusive forward presence, rapid responsiveness, and inherent flexibility of space forces enable them to provide real-time and near-real-time support for military operations across the entire spectrum of conflict.

Space Forces and the Revolution in Modern Warfare

Advances in technology provide the potential to alter fundamentally the conduct of modern warfare. Driven primarily by improvements in information collection, processing, and transmission technology, this revolution could have an impact upon military operations at least as dramatic as the introduction of the aircraft or tank earlier in this century. Space forces are playing a central role in this ongoing revolution because they provide unique capabilities for gathering, processing, and disseminating information.

THE PERSIAN GULF CONFLICT AND SPACE SYSTEMS SUPPORT TO MILITARY OPERATIONS

The contributions of space forces to U.S. defense strategy and military operations were not widely recognized prior to the Persian Gulf conflict of 1991. In part, this was because DoD's exploitation of space systems during the Cold War focused heavily on providing support to the NCA and strategic nuclear users in peacetime. Space systems played significant roles, however, in the success of contingency operations in Grenada (Urgent Fury, 1983), Libya (El Dorado Canyon, 1986), the Persian Gulf (Earnest Will, 1988), and Panama (Just Cause, 1989). Since

Operation Desert Shield/Desert Storm, space systems also have played significant roles in support of nearly every U.S. military operation including those in Iraq (Provide Comfort), Somalia (Restore Hope), and the former Yugoslavia (Provide Promise).

The Gulf War thus was a watershed event with respect to the emergence of space power as an element of U.S. military power. Indeed, Operation Desert Storm has been called the first space war. U.S. national security space systems, augmented by U.S. civil, commercial, and allied space systems, were employed more extensively than in previous contingencies and with broader integration into the overall force structure. From the initial force deployment planning to the final cease-fire, space systems were integral to nearly all phases of military operations. Space forces directly influenced the course and outcome of the conflict. They helped to pierce the fog and moderate the friction of war. Consequently, space forces helped to confer a decisive advantage upon United States and coalition forces in terms of combat timing, operational tempo, synchronization, maneuver, and the integrated application of firepower.

During the Persian Gulf conflict, the United States demonstrated it is the only nation with a high technology system of systems which integrates command, control, communications, computers, and intelligence (C⁴I) systems with military platforms and weapons systems equipped with advanced conventional munitions. As employed in Operation Desert Storm, this C⁴I-to-strike force was overwhelmingly effective against an adversary with conventional armored forces and air defense systems. Space forces provide key capabilities to integrate and deliver C⁴I support to land, sea, and air forces. In particular, space systems provide:

- Global, real-time and near-real-time, all-weather, day/night, reconnaissance, surveillance, early warning, attack assessment, and environmental monitoring for a dynamic, multidimensional picture of the area of operations to observe the entire theater, assess enemy and friendly strengths and weaknesses, and define objectives.
- Instantaneous, secure battle management, command, control, and communications for rapid and coordinated execution and redirection of force packages and joint operations for maximal effect;
- A global three-dimensional grid reference system for standardizing the locations of force positions, force directions, and force objectives to facilitate the flexible, discriminate application of individual force packages and joint operations; and
- Continuous, real-time, all-weather, day/night, precise navigation, positioning, timing, and velocity data for the attainment of near zero circular error probable weapons delivery accuracy, thereby minimizing the level of force required to achieve an objective with minimum casualties and collateral damage.

Space-based force multipliers help to improve operational effectiveness, efficiency, and interoperability; maintain high technology superiority; and support worldwide deployment, sustainment, and operations of U.S. land, sea, and air forces. By providing almost global coverage, space forces help to compensate for reductions in forward positioned infrastructure

and provide ready, in-place capabilities to support U.S. forces worldwide without the need to mobilize additional combat resources.

C⁴I AND THE U.S. CONTRIBUTION TO GLOBAL SECURITY

Space forces are a comparative national advantage of the United States and are an area within coalition strategy that can contribute unique capabilities for global security. In particular, space systems are capable of performing missions which place a premium on interoperability and the capability to operate effectively with other nations' forces. Space systems enable United States and allied land, sea, and air forces to operate jointly in a more efficient and effective manner. They may also provide a means to support political commitments without putting U.S. forces at risk. Moreover, certain space systems provide dual-use capabilities employed by U.S. as well as international civil and commercial users in peacetime.

The exploitation and control of space will enable U.S. forces to establish information dominance over an area of operations. Establishing such dominance will be the key to achieving success in future crises or conflicts. As the Gulf War showed, this can greatly enhance U.S. and allied ability to fight on favorable terms by taking the initiative away from the adversary. The ability to provide C⁴I support to U.S. forces, and deny such support to an adversary, will enable combatant commanders and operational forces to think and react faster than an adversary and thereby dictate the timing and tempo of operations. Seizing and maintaining information dominance progressively, and in an accelerating manner, will help to paralyze an adversary's ability to command and control its forces.

The Persian Gulf conflict, however, also enabled allies and potential adversaries to observe the value of, and U.S. reliance upon, space forces. As a result, numerous countries in regions around the world are acquiring or accessing space systems, technologies, and products. Foreign nations and subnational groups are obtaining space capabilities through indigenous efforts, purchases of goods and services, and cooperative activities. Combined with the proliferation of nuclear and other weapons of mass destruction, missile systems for their delivery, and advanced conventional weapon systems, the spread of indigenous military and intelligence space systems, civil space systems with military and intelligence utility, and commercial space services with military and intelligence applications poses a significant challenge to U.S. defense strategy and military operations.

Consequently, DoD must be able to ensure freedom of action in space for friendly forces while, when directed, limit or deny an adversary's ability to use the medium for hostile purposes. To ensure space control, DoD will preserve its capabilities to surveil and monitor all military significant activities in space. DoD also will continue to design, develop, and operate space systems with ensured survivability and endurability of their critical functions. Moreover, DoD must have capabilities to deny an adversary's use of space systems to support hostile military forces.

In addition to military countermeasures, DoD's strategy to deal with the threat posed by the proliferation of space capabilities with military and intelligence applications includes: actions to strengthen U.S. competitiveness in foreign markets; measures to protect technologies, methodologies, and overall system capabilities which sustain U.S. advantage in space

capabilities and promote continued U.S. technological advancements; maintaining controls over significant capabilities which can be sold or transferred to foreign recipients; government-to-government relationships with friendly states involving the sharing and protection of space technology, products, and data; and agreements or arrangements which limit or deny foreign access to space systems, technology, products, and data which could provide support to hostile forces.

SPACE AND NUCLEAR DETERRENCE

Space forces are an integral element of the overall deterrent posture of the U.S. armed forces. Any nation contemplating an action hostile to U.S. national security interests must be concerned about American space capabilities. Space systems provide the NCA, combatant commanders, and operational forces with unprecedented global situational awareness to identify and react to threats. Although the United States is withdrawing some forces from overseas bases, space systems continue to provide non-intrusive, near-global coverage. Space forces thus increase the risk that hostile actions will be discovered by the United States, can introduce an element of uncertainty into the minds of potential adversaries, and thereby may influence the risk calculations another nation makes before initiating aggressive behavior.

In particular, as noted above, space forces provide unique capabilities for collecting and disseminating information for determining other nations' capabilities and intentions. This includes information for indications, warning, and responding to the threat or use of weapons of mass destruction against the United States, its armed forces, allies, and friends. Space systems also support treaty monitoring and enable Presidential and diplomatic communications to convey national interests and objectives to allies and adversaries. Space systems thus are critical to the ability of the United States to sustain a credible deterrent posture which will continue to ensure that the costs of the threat or use of mass destruction weapons and delivery systems are unacceptable.

Space forces also are essential for ensuring that U.S. land, sea, and air forces are capable of conducting operations to delay, disrupt, or destroy the acquisition, deployment, and supporting infrastructure for weapons of mass destruction and missile systems. Space systems collect and disseminate information necessary for detecting, identifying, and characterizing threats. This includes nuclear material production, weapons systems transfers, and movements. Space systems support military planning, mission rehearsal, and targeting; detect nuclear detonations; provide launch point determination; ensure command, control, and communications; enable precise navigation, maneuver, and weapons delivery; facilitate smart weapons selection and force coordination; and support mapping, charting, geodesy, and terrain analysis. The force multipliers provided by space forces will enhance the effectiveness of military operations to seize, disable, or destroy weapons of mass destruction and their means of delivery.

Furthermore, space forces improve the effectiveness of active and passive defense measures. U.S. armed forces must be prepared to conduct operations against potential adversaries equipped with weapons of mass destruction and missile systems. Space systems will support the operations of active defenses which can intercept ballistic missiles with a high degree of confidence and prevent or limit contamination should the missile be carrying a nuclear, biological, or chemical weapon. Space system technologies are being investigated to allow

cuing of missile defense forces to attacks by cruise missiles. They also will support civil defense of populations and passive defenses of operational forces. Space systems can provide missile launch detection; impact point prediction; target acquisition sensor cuing; battle management; command, control, communications, and intelligence; and missile warning dissemination.

Among the most dramatic examples of the contributions of space systems during the Persian Gulf conflict, for example, was the use of the space-based sensors and communications systems to provide warning of Iraqi tactical ballistic missile launches against targets in Saudi Arabia and Israel. This missile warning information facilitated the passive defense of coalition forces, civil defense of populations, and Patriot theater missile defense engagements of Scud ballistic missiles. It proved to be a critical factor in minimizing casualties and preventing escalation of the conflict.

Space Force Structure

DoD space policy emphasizes integrating space forces and operations with terrestrial forces to provide assured, responsive support to military operational forces. DoD space force structure is comprised of space systems and capabilities in four mission areas. First, the space support mission area involves operations to deploy and sustain military systems in space. Second, the force enhancement mission area involves space combat support operations to improve the effectiveness of U.S. and allied land, sea, air, and space forces as well as operations which support other national security, civil, and commercial users. Third, the space control mission area involves counterspace operations to ensure the ability of U.S. and allied forces to exploit space, while limiting or denying an adversary's ability to exploit the medium for hostile purposes. Finally, the force application mission area involves fire support operations from space against enemy land, sea, air, or ballistic missile forces.

SPACE SUPPORT

The space support mission area includes capabilities for launching and deploying space vehicles, maintaining and sustaining spacecraft on-orbit, and deorbiting and recovering space vehicles as required. The Eastern Range at Cape Canaveral Air Force Station, Florida, and the Western Range at Vandenberg AFB, California, are the nation's primary space launch facilities. DoD employs Pegasus, Delta II, Atlas II, and Titan II and IV space launch vehicles as well as Inertial Upper Stage and Centaur upper stage boosters to deliver payloads into orbit. Centralized command and control of DoD satellites is provided by the Consolidated Space Operations Center at Falcon AFB, Colorado. The Air Force Satellite Control Network provides telemetry, tracking, and control for most DoD satellites. The Navy Satellite Operations Center also provides telemetry, tracking, and control for some DoD satellites. In addition, Air Force Transportable Mission Ground Stations can provide mobile command and control capabilities for certain DoD satellites.

FORCE ENHANCEMENT

The force enhancement mission area includes capabilities for reconnaissance and surveillance, tactical warning and attack assessment, communications, navigation, and environmental

monitoring. Space-based reconnaissance and surveillance systems support virtually all DoD activities. The National Reconnaissance Office (NRO), a combined activity of DoD and the Central Intelligence Agency, is organized as a DoD agency. The NRO is funded through the National Reconnaissance Program which is responsible for managing U.S. government intelligence collection from spaceborne and assigned airborne data collection systems. The NRO's mission is to ensure that the United States has the technology and spaceborne and airborne assets needed to acquire intelligence worldwide for such purposes as monitoring arms control agreements and supporting the planning and conduct of military operations. The NRO accomplishes this mission through research and development, acquisition, and operation of spaceborne and airborne data collection systems. Through Service Tactical Exploitation of National Capabilities (TENCAP) programs, selected national space systems can be exploited by U.S. land, sea, and air forces to provide tactical support to combatant commanders and operational forces. Military department TENCAP programs are crucial to providing operational force commanders timely in-theater tactical support. Fielding of TENCAP equipment from theater CINCs to Army divisions and brigades, Air Force wings and squadrons, and Navy surface action groups is an ongoing effort. By the end of 1994, the Army will field TENCAP systems to all Corps/Division forces.

DoD operates space- and ground-based systems to provide the NCA with timely, reliable, and unambiguous tactical warning and attack assessment data for force survival or retaliatory decisions against air, space, or ballistic missile threats. The space-based Defense Support Program provides global detection and reporting of missile and space launches. A network of ground-based radars provides detection, tracking, and warning of ballistic missile attack against the United States, Canada, the United Kingdom, and Europe. In addition, the NUDET Detection System provides timely, reliable, and accurate detection, locational fixes, and yield readings of nuclear detonations for strike, damage, and attack assessments, force management, and test ban monitoring.

Space-based military satellite communications (MILSATCOM) systems provide communications services in support of numerous DoD and other U.S. government users. The Defense Satellite Communications System (DSCS) provides super high frequency secure voice and high data rate transmissions for worldwide military command and control, crisis management, relay of intelligence and early warning data, treaty monitoring, diplomatic and Presidential communications, and communications support for deployed tactical forces. DSCS also provides limited anti-jam worldwide connectivity for critical functions such as tactical warning and attack assessment and Emergency Action Message dissemination for the NCA, Joint Staff, command centers, and other users. The Fleet Satellite Communications and UHF Follow-On systems provide ultra high frequency communications for mobile forces, including fleet broadcast services and command and control of surface ships, submarines, and aircraft. The Air Force Satellite Communications (AFSATCOM) system provides reliable, enduring, worldwide command and control communications to designated Single Integrated Operational Plan/nuclear-capable users for Emergency Action Message dissemination, internetting among command authorities, force direction, and force reporting. AFSATCOM also is used by a limited number of high priority non-nuclear users for operational missions, contingency and crisis operations, and exercise support. DoD augments these dedicated MILSATCOM systems by using the National Aeronautics and Space Administration's Tracking and Data Relay Satellite System and by leasing capacity on various commercial communications satellites.

The Navstar GPS provides all-weather, day/night, three-dimensional, precise navigation, positioning, timing, and velocity data to land-based, seaborne, and airborne U.S. and allied forces as well as other national security, civil, and commercial users. GPS enhances force coordination, command and control, target mapping, the probability of target acquisition, flexible routing, and weapons delivery accuracy, especially at night and in adverse weather. The Transit Navy Navigational Satellite System, scheduled to be phased out once the GPS system reaches full operational capability, provides two-dimensional position location for fleet ballistic missile submarines as well as other naval and commercial vessels.

DoD employs a combination of military, civil, and commercial space systems to support its requirements for environmental monitoring. Land remote sensing systems provide multi-spectral imagery (MSI) of the earth in support of numerous DoD activities as well as other national security, civil, and commercial users. MSI data is U.S. unclassified data and is a critical source used to produce MC&G products ranging from one to three hours to one to three days for areas of the world where no tactical, 1:50,000 maps are available or they are 10 to 30 years old. MSI products and data are used to support military planning and targeting, mapping, charting, and geodesy, hydrography, counternarcotics operations, and monitoring arms control agreements. DoD also purchases MSI products and data derived from France's SPOT remote sensing space system. In addition, the GEOSAT Follow-On system provides real-time oceanographic topographical data such as wave heights, currents, and fronts to naval users. The Defense Meteorological Satellite Program collects and disseminates global visible and infrared cloud cover imagery and other meteorological, oceanographic, and solar-geophysical data in support of operational forces. DoD augments this dedicated military space system by using NOAA and international meteorological satellite systems.

SPACE CONTROL

The space control mission area includes capabilities for surveillance of space, space system protection, and space system negation. The Space Surveillance Network (SSN) provides space object cataloging and identification, satellite attack warning, timely notification to U.S. forces of satellite flyover, space treaty monitoring, and scientific and technical intelligence-gathering. In addition, the SSN would provide targeting and damage assessment information in support of antisatellite weapon system operations if such capabilities were deployed. DoD space systems are designed, developed, and operated to assure the survivability and endurance of space mission capability in peace, crisis, and though appropriate levels of conflict commensurate with national security requirements. The survivability of DoD space systems is enhanced, as appropriate, through such protection measures as satellite proliferation, hardening, communications cross-links, communications security protection, and interoperable ground control. Space system negation can be accomplished by methods to counter the ground- or space-based elements of a space system or their data linkages.

FORCE APPLICATION

Finally, the force application mission area would include capabilities for ballistic missile defense and power projection. Space-based interceptors are now a technology base program only. Research in this area is aimed at developing advanced follow-on technologies offering promise for improved performance in both tactical and strategic defenses as insurance against

possible future threats. The DoD space force structure does not include any capabilities for power projection.

Major DoD Space Programs

Space programs constituted three of the six major acquisition programs examined during the Bottom-Up Review. The modernization choices for key space support and force enhancement programs which emerged from the Review emphasized investing to sustain current space launch capabilities for assured access to space while developing and deploying improved capabilities for military satellite communications. An additional review was undertaken on the modernization choices for space-based early warning which would enhance the operational effectiveness of U.S. and allied forces.

SPACE LAUNCH MODERNIZATION

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.

DoD's space launch capability currently is characterized by high cost and operational limitations because of the need to sustain three separate launch teams (for three types of space launch vehicles) and associated support equipment, the aging and obsolescence of major expendable launch vehicle and range system components, and continued dependence upon outdated launch vehicle production lines and labor intensive launch processes. As a result, the performance and flexibility of launch operations and system responsiveness to support crises or emergencies are limited.

To address these concerns, DoD considered three alternative options. First, extending the life of the current fleet of launch vehicles to 2030. Second, developing a new family of expendable launch vehicles to replace the current fleet starting in 2004. Third, pursuing a technology-focused effort to develop a reusable launch vehicle that would effectively leapfrog the next generation of expendable launch vehicles. In addition, more austere versions of the first and second options were developed which funded only necessary improvements for the space launch and range infrastructure. After reviewing the alternatives, the austere life extension option was selected. This option adequately fulfills DoD's projected space launch needs at the lowest cost over the next decade. It includes the necessary improvements to current space launch infrastructure and retains the option for incremental improvement to the current launch fleet to support future needs.

MILITARY SATELLITE COMMUNICATIONS

The Bottom-Up Review evaluated MILSATCOM program alternatives in light of the projected threat, cost and effectiveness tradeoffs, and affordability. The primary emphasis was on

providing low-data-rate (LDR) and medium-data-rate (MDR) communications for U.S. strategic and tactical forces employed in one or more major regional conflicts, although the Review also addressed other requirements for strategic forces. The focus of the Review was on identifying and evaluating lower-cost alternatives to the Military Strategic and Tactical Relay (MILSTAR) communications system. MILSTAR will provide a survivable, jam-resistant, worldwide communications system to meet essential communications needs of the NCA, combatant commanders, and operational forces at all levels of conflict.

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 original design thus 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 the restructuring of the MILSTAR program to emphasize its utility for tactical military forces and reduce system costs. The system's survivability and durability features as well as its constellation size also were reduced. Nevertheless, the issues of MILSTAR affordability and alternative satellite designs were raised during preparation of the FY 1994 defense budget. The Review thus undertook a comprehensive evaluation aimed at determining the costs and effects on military capabilities of the MILSTAR program and its alternatives.

DoD considered four alternative options to the current program. First, retain two MILSTAR I satellites (LDR only) and four MILSTAR II satellites, eliminate the fifth and subsequent MILSTAR II satellites, and develop Advanced Extremely High Frequency (AEHF) satellites to provide LDR and MDR capabilities using advanced technology. Second, retain two MILSTAR I satellites and cancel MILSTAR II, replace the four MILSTAR II satellites with ones providing an MDR capability (eliminate the LDR capability), and develop Advanced EHF satellites with both MDR and LDR capabilities. Third, retain two MILSTAR I satellites and cancel MILSTAR II and replace the system with Advanced EHF satellites with both MDR and LDR capability. Fourth, cancel MILSTAR II and replace the system with accelerated development of Advanced EHF satellites with both MDR and LDR capability.

After reviewing the alternatives, the Department decided to proceed with the first option, deploying two MILSTAR I satellites and the initial constellation of four MILSTAR II satellites and then transitioning to a lower-cost, lower-weight Advanced EHF satellite with a first launch no later than FY 2006. This option 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.

SPACE-BASED EARLY WARNING

The Department examined alternatives for satisfying ballistic missile tactical warning and attack assessment and mid-course tracking requirements. The baseline plans were to replace the Defense Support Program (DSP) with the Follow-on Early Warning System (FEWS), and Brilliant Eyes program was to perform the new mid-course tracking mission. Alternatives to these programs ranged from upgrading DSP to platforms that use multi-spectral processing techniques, to combining both missions on a single platform.

The Department determined that a more capable system than DSP was needed to detect the tactical ballistic missile threat, but that the FEWS program was unaffordable. Consequently,

the Department is terminating the FEWS effort, but a new less ambitious program is being developed to replace it. The new program will still emphasize the detection of tactical ballistic missiles.

The Department also decided to slow the Brilliant Eyes program, because of the de-emphasis on National Missile Defense. The program is needed, not only to support National Missile Defense, but also because Brilliant Eyes can enhance the performance of theater missile defenses — particularly for more capable interceptors countering longer-range threats.

The Department also examined the cost effectiveness of satisfying the tactical warning and attack assessment and the mid-course tracking missions within a single system (at low earth orbit). The Department determined the modifications that would have to be made to Brilliant Eyes to support the tactical warning and attack assessment mission would overcomplicate the simple platform envisioned and burden both missions with excess costs and risk. Consequently, the Department is continuing to develop two separate systems.

Conclusion

Space forces are essential for countering the post-Cold War dangers to U.S. national security interests. Space systems provide force multipliers which are critical for complementing and enhancing the capabilities of U.S. land, sea, and air forces. The force structure and modernization initiatives planned for the coming years will ensure that DoD space forces will retain the capability and versatility to accomplish their missions effectively and efficiently in support of national security strategy and national military strategy.

RESERVE COMPONENTS

Introduction

In sizing and shaping the Reserve components (RC), innovative approaches have been taken to leverage their contributions to compensate for a smaller Total Force. Compensating leverage does not mean maintaining larger Guard and Reserve forces. Rather, as described below, it means smarter use of the forces that are retained. Integration of Guard and Reserve combat capabilities requires even more than smart sizing and shaping — it requires initiatives for flexible accessibility and readiness to address the four new dangers in today's post-Cold War world.

New Dangers Demand New Roles for the Guard and Reserve

The four new dangers, as mentioned previously, dominate the post-Cold War world. Building on the traditional strengths of the Guard and Reserve can help meet the new dangers with a smaller Total Force.

REGIONAL THREATS

Regional threats range from territorial aggression (as in the Iraqi attack on Kuwait) to threats against U.S. and allied interests (as in Panama), to the need to punish support of terrorism (as in Libya). Guard and Reserve forces can contribute significantly in regional conflicts by:

- Deploying combat support (CS) and combat service support (CSS) units to support combat forces and backfill for active duty units deployed; and
- Deploying combat forces with a range of capabilities to:
 - Backfill or replace ground and air forces overseas that are deployed to a contingency;
 - Round-up brigades to reinforce active Army divisions and corps, and other augmentation and rotation forces (for example, rear area security) to free active Army divisions and brigades for combat;
 - Augment and reinforce forces for Marine Air Ground Task Forces; and
 - Utilize as building blocks for primary combat forces the deployment of entire Air reserve fighter, bomber, and air mobility units.

Guard and Reserve forces can help in peacekeeping and humanitarian assistance by:

- Supporting large operations with strategic airlift, cargo handling, civil affairs, etc.; and

- Replacing active duty forces, either to rotate active forces during a prolonged operation or to replace active forces redeployed during a major regional contingency.

PROLIFERATION OF WEAPONS OF MASS DESTRUCTION

Weapons of mass destruction in the hands of emerging regional powers radically change the regional threats. New contributions for the Guard and Reserve are being explored, especially in CONUS air defense.

FAILURE OF DEMOCRATIZATION

Failure of democratization in the former Soviet Union states could lead to a renewed global military challenge. Military-to-military contacts by RC personnel can help support the movement towards democratization. The RC can provide a hedge against the failure of democratization and the necessary forces to counter the reemergence of a global threat.

ECONOMIC CHALLENGES

Economic challenges at home and abroad require a shift in national focus towards America's economic base (technology and infrastructure). The Guard and Reserves can help DoD respond to this challenge by:

- Providing some wartime capabilities at lower peacetime cost;
- Supporting peacetime operations, as a by-product of mission training; and
- Training periodically overseas to provide more U.S. military presence.

CHALLENGES TO DOMESTIC STABILITY AND SECURITY

Finally, there is a continuing need to plan for DoD's assistance and support to civilian authorities response to challenges to domestic stability and security. Although any element of DoD can be employed to meet emergency needs when appropriate, the Army and Air National Guard operating under state control provide a unique capability to be the primary military forces employed to meet these challenges. They provide units in response to natural disasters and domestic emergencies, such as urban rioting, interdicting the flow of illegal drugs into the country, and providing for the air defense of North America and sovereignty of U.S. airspace.

In addition to playing a vital role in disaster response and augmentation of the Active components' (AC) domestic defense missions, the Reserve components have the skilled personnel and resources to address critical domestic needs on a nationwide scale. Several pilot programs have already been implemented, to include:

- National Guard Youth ChalleNGe, a residential 22-week program for high school dropouts designed to allow them to earn GEDs and acquire essential life skills;

- STARBASE, a program designed to introduce inner-city children in grades K-12 to applied mathematics and science, while addressing drug abuse prevention, self-esteem, and life skills;
- The Los Angeles Unified School District Outreach program, supported by the National Guard in conjunction with the school district to enhance art, math and science instruction, and equipment availability;
- Junior Reserve Officers Training Corps (JROTC) program, based in high schools to promote development of leadership skills;
- Assistance to medically underserved communities; and
- ASSIST, the Army Reserve program which encompasses JROTC, ChalleNGe, and several other civil-military programs.

The New Force Size and Shape

The size of the future Guard and Reserve forces is driven by four considerations: two nearly simultaneous MRCs, peacetime presence missions, uncertainties requiring strategic insurance, and domestic missions.

Strategic insurance is needed in the Reserve components to provide for extended crisis and peacekeeping operations (for example, to provide a rotation base) and for a deterrent hedge against the threat by an emergent hostile power with military capabilities much greater than regional adversaries present today. Also, sufficient Guard forces will still be required in wartime to meet domestic missions. The force envisioned by the Secretary of Defense will meet these requirements.

The AC-R mix of the force was determined largely by the relative readiness of Active and Reserve component forces, the need to sustain peacetime presence requirements, as well as the availability of strategic lift and prepositioning of equipment. The Air Force AC-RC fighter mix is a case in point where Reserve forces could have met contingency deployment requirements but could not meet sustained peacetime presence requirements on a cost-effective basis. The challenge was to shape the Reserve components of each Service to meet the dangers confronting the nation, but to do so in ways that leverage their traditional strengths.

ARMY GUARD AND RESERVE ROLES SIGNIFICANTLY EXPANDED

During the Cold War, the organizational focus for Army RC combat forces was division-sized units, to reinforce and replace active divisions fighting the Warsaw Pact in Europe. With the new dangers, the Army RC combat capability will focus on brigade-sized units which can be ready to deploy much more quickly after mobilization than divisions. About 37 Guard combat brigades are planned for FY 1999. Fifteen will be enhanced readiness combat brigades which will be organized and resourced so that they can be mobilized and deployed within 90 days after call-up. The remaining Army Guard brigades will be maintained at lower readiness levels. The Army Guard and Army Reserve end strength in FY 1999 will be sustained at 575,000 people to

assure substantial combat, combat support, and combat service support forces for both overseas and domestic missions.

The 15 Army Guard Enhanced Brigades will be capable of reinforcing Army Active component combat forces in regional contingencies. These brigades provide additional depth to deal with uncertainty and risk. They could be mobilized and deployed to participate in adverse cases of a single MRC and constitute a ready strategic reserve of combat forces to hedge against the eruption of a second MRC.

The other Army National Guard Brigades provide a broad spectrum of combat augmentation and a strategic hedge against global uncertainty as well as continued support to civil authority during major regional contingencies. The Guard brigades could also provide the basis for rotational forces in the event of extended crises that are prolonged or more intense than expected, or as a hedge against the possible failure of democratic reform in Russia, Ukraine, and elsewhere in the world. These Guard brigades could also perform other missions during an MRC, such as rear area security and military presence in other critical theaters.

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 clearly demonstrated during the Persian Gulf War. The future Army Reserve will be focused on providing the CSS mission during times of crisis and war. Some force structure currently in the Army Guard will be transferred to the Army Reserve. The kinds of units the Army Reserve will gain include medical, signal, military police, and transportation units.

NAVAL RESERVE SHAPED FOR CRISIS RESPONSE AND PEACETIME PRESENCE SUPPORT

During the Cold War, the Naval Reserve was sized and shaped to provide immediate augmentation across the entire warfare spectrum to the active force in time of emergency. Current assessments of the global threat and the naval strategy suggest the need for an Active and Reserve team of naval expeditionary forces shaped for joint littoral operations and diverse regional crises. Such a strategy represents a fundamental shift away from blue water sea control and calls for the integration of Active and Reserve components into a single, cohesive fighting force capable of meeting peacetime presence commitments and short notice contingencies, while maintaining the capability to fully mobilize. The major sizing determinants for force structure are the ability to respond to two nearly simultaneous MRC scenarios, and day-to-day forward deployed operational requirements.

Naval Reserve ship augmentation capability, maintained in order to rapidly increase manning to wartime levels, is now being dramatically reduced. Older Naval Reserve ships will be replaced by newer, more modern surface combatants as the size of the active fleet is reduced, thus increasing the Navy's capability to respond to contingency operations. The Naval Reserve is planned to have more modern ships than ever, including an aircraft carrier, 10 Perry-class frigates (FFG-7s), and new MCM ships.

Naval Reserve Aviation can achieve sufficient peacetime readiness to augment Naval forces during contingency operations. Nine squadrons of P-3 aircraft are planned for retention along

with one (of the current two) Reserve Carrier Air Wings. One Naval helicopter countermine squadron will be in the Naval Air Reserve.

Additional plans call for an expanded contribution by reserve forces in the combat support/combat service support areas during crisis and peacetime presence support during day-to-day operations. While the overall size of the Naval Reserve will be reduced, some mission areas will be increased. The utilization of Naval Reserve medical program personnel to provide support to active medical treatment facilities and construction battalions to reduce maintenance of real property backlogs are only two examples of the innovative use of reserves in peacetime presence support. Intelligence programs, construction battalions, logistics forces, cargo handlers, harbor security units, intermediate maintenance activities, and other augmentation units are being reoriented to provide surge capability in crisis, either as forward deployed forces or as backfill for deployed active forces.

The rightsizing of the Naval Reserve demonstrates the principle of compensating leverage by allowing the Reserve proportion of Total Navy to increase, permitting the Navy to move ahead in the new era more efficiently and economically.

MARINE CORPS RESERVE CONTINUES ITS TRADITIONAL ROLES

Much like the Active Marine Corps, during the Cold War the Marine Reserves were structured in ways that are appropriate to the new dangers. Even during the height of the Cold War, the USMC maintained characteristics of an Expeditionary Force — the same sort of characteristics needed to meet regional contingency needs. The Marine Reserves were structured to provide both augmentation, to bring Active forces to full wartime strength, and reinforcements to give greater depth to Active forces. The Bottom-Up Review reaffirmed a requirement for both an augmentation and reinforcement capability in the USMCR and to maintain a selected Marine Corps Reserve strength of 42,000.

The Marine Corps Reserve of the future will still be a relatively small force — about 20 percent of total Marine Corps authorized personnel strength. The integration of Marine Corps Reserve combat units will continue to be at the small unit level. This will assure that the Marine Corps Reserve retains an ability to deploy and integrate itself effectively with active forces with minimal train-up time following mobilization.

AIR RESERVE COMPONENTS (ARC) EXPAND CURRENT ROLES

The Air Guard and Air Force Reserve have achieved substantial readiness for functions which continue to be appropriate to regional contingencies.

Some new functions are being assigned to the Air Reserve components. The Air Guard and Air Reserve will move into the conventional bomber function area. The Air Guard will assume command and control of CONUS Air Defense, including the 1st Air Force and all CONUS Regional and Sector Operations Centers. The number of Air Guard interceptor squadrons will be reduced. The Air Guard and Reserve will make expanded contributions to Air Force tanker and strategic airlift functions.

Finally, there will be reductions in Air Reserve component fighter contributions, although Air Guard and Reserve capabilities, as a percentage of the Total Force, will still be substantially higher than during the Cold War. One result of the Bottom-Up Review is an identified need for a 20 fighter wing force to meet the requirements for a two MRC capability. At the same time, however, peacetime presence needs, including an active rotation base, require retention of 13 wings in the Active force. Reductions in Air Guard and Reserve fighter units result primarily from peacetime requirements for active fighter units.

The restructured ARC will continue to exploit traditional strengths while adapting to new requirements. Although reductions have been made to tactical fighter units, expansion of other critical function areas will ensure their full integration into the Total Air Force.

Making the Force More Accessible and Ready

ACCESSIBILITY

In the Cold War, defense planning was based on early mobilization of all RC forces in response to a Warsaw Pact attack on NATO. Accessibility of the RC was not an issue for this kind of danger. With the new dangers, RC planning spans a wider spectrum of needs: wartime contingencies, domestic emergencies, and peacetime operations. As DoD becomes more reliant upon the contributions of the Reserve components, assuring flexible access to Guard and Reserve forces takes on increasing importance.

The Department has formed a Reserve Component Accessibility Steering Group to identify the changes in legislation and DoD policy to ensure the timely and reliable access to the Reserve components not only for regional contingencies but also peacetime operations and domestic emergencies. Key to that process is the recognition that any change in policy or legislation must promote a more responsive, flexible, and effective system for accessing Reserve forces into the Active components, while at the same time ensuring Reserve members continue to be treated fairly. The Department is also exploring ways to better meet domestic mission needs by implementing bilateral and multilateral agreements for cooperation among the states. The ultimate objective, of course, is to assure the availability of Guard and Reserve forces when needed, while assuring that America does not overextend its reliance on citizen soldiers, their families, or their employers.

READINESS

In the Cold War, there was a relatively uniform level of readiness planned by each Service for its Reserve components, since all would be called up quickly in the scenario used for planning -- a Warsaw Pact attack on NATO.

In the post-Cold War planning, some RC units will be needed before others, for example, strategic mobility and cargo handling. Therefore the readiness of a unit should depend on its mission -- which defines how much post-mobilization time would be available to improve its personnel and equipment readiness, and to train it. Current planning is based on assuring the

mission readiness of Guard and Reserve forces when deployed. Readiness initiatives will focus on the sufficiency of operating funds, on improving full-time support (particularly for the U.S. Army Reserve), on compatible and modern equipment, and on adoption of the Title XI initiatives, including increased use of simulators. The Army will continue to expand Bold Shift — its program to ensure that early deploying Guard and Reserve units have higher states of readiness than later deploying units.

One part of RC strategy for equipment readiness is to maximize Reserve component use of equipment made available from the active force drawdown, but this will not provide for all equipment needs. The Services have been directed to fund unique Guard and Reserve equipment requirements to ensure that, by FY 1999 at the latest, all Reserve components are adequately equipped to accomplish their assigned missions.

Conclusion

During the mid-1980s, the Guard and Reserves grew in size and capability in response to a global Soviet threat. With the end of the Cold War, the challenge is to reconfigure the Guard and Reserve to be responsive to new world dangers that threaten regional conflicts and require more peacetime utility for peacekeeping and humanitarian assistance activities, both abroad and at home.

Restructuring the Reserve forces is only the first step. The Guard and Reserve must be ready to meet new challenges, in some cases shorter time constraints than planned for in the Cold War era. Enhancements in training, increased full-time support personnel, and the development of an equipment strategy to target essential items of equipment for early deploying units will improve the readiness of the Reserve components. Finally, these forces must be accessible when needed, both for contingencies and for peacetime support of peacekeeping and humanitarian assistance missions and domestic emergencies.

With shrinking defense budgets, the nation must make fullest use of the cost-effective contributions offered by the Reserve components. Innovations in structuring the Total Force, together with adequate resourcing and policies to ensure timely deployability, will yield a more affordable force that is still capable of meeting foreseeable threats. The Guard and Reserve will continue to be full partners of the Total Force into the 21st century.

COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C⁴I)

Introduction

Command, control, communications, computers, and intelligence (C⁴I) systems have traditionally been viewed as the combination of communications, warning, intelligence, command, and information systems necessary for military decisionmaking and force management. These systems provide the command and control (C²) foundation for optimal effectiveness of the forces. The challenges for these systems in the new security era are formidable.

Meeting the Challenges of the New Security Era

It has been necessary to adopt new policies and a more comprehensive and integrated C⁴I conceptual framework to meet these challenges. This new framework expands the traditional boundaries of C⁴I into areas such as counterintelligence, Corporate Information Management (CIM), and information warfare. As such, it not only encompasses commanding and controlling the combat forces, but also addresses comparatively, the ability of potential adversaries to command and control their forces. It also provides a business-oriented look at the systems and processes needed to support the forces.

In the new security era, interoperability must be demanded in C⁴I systems, as well as the insertion of advanced technology into systems to drive down costs while improving capabilities. DoD must continue to modernize C⁴I capabilities and prepare for smaller regional conflicts involving coalition partners. In this regard, DoD is:

- Emphasizing the development of joint and multinational C⁴I doctrine to ensure DoD programs and capabilities address joint and multinational support;
- Developing guidance, priorities, and direction to ensure requisite C⁴I capabilities are provided to the forces in support of joint or multinational operations;
- Putting in place a strong standards development, testing, and certification process to ensure C⁴I systems are interoperable; and
- Placing emphasis on modernizing C⁴I capabilities through the effective adoption of commercially available technology.

Command, Control, Communications, and Computers (C⁴)

SPACE AND NUCLEAR C⁴

DoD is continuing to restructure, consolidate, and downsize strategic C⁴ assets to provide effective command and control of the nuclear forces, yet achieve significant cost savings and

manpower reductions. The October 1991 Strategic Command, Control, and Communications Review resulted in the retirement of 31 EC-135 command and control aircraft. As a follow-on, plans call for consolidating CINC Strategic Command's airborne command post functions into the newer E-6A TACAMO aircraft which will allow retirement of the remaining EC-135s.

Another critical C⁴ capability provides warning and assessment of ballistic missile attack. The space-based Defense Support Program (DSP) has served the nation well but has inherent limitations that will require its replacement. The replacement system will use infrared technology to detect ballistic missiles during boost phase, similar to DSP, but has the potential to provide more accurate information regarding the origin and predicted destinations of ballistic missile launches. This new early warning system will be structured to reduce costs and exploit proven technologies.

Satellite communication (SATCOM) provides important capabilities in support of both strategic and nuclear C², and important elements of conventional C², to include communications for deployed tactical forces. The UHF Follow-On (UFO) SATCOM system, the Air Force Satellite Communications System, the DSCS, the MILSTAR system, and the Advanced EHF satellite will support military needs into the next decade. However, commercial satellites will also be used, where appropriate, to provide cost-effective augmentation of these military capabilities, ensuring that both day-to-day and surge requirements will be met by the best combination of systems. Accordingly, the Department has recently issued policy for the use of commercial SATCOM services which will guide the future commercial investment strategy of the defense agencies and the Services.

CONVENTIONAL WARFARE C⁴

LoD is developing and implementing a conventional warfare C⁴ capability that is responsive to the postulated missions for U.S. forces following the demise of the Warsaw Pact and reflects the changes in the threat and the nature of modern warfare. The objective is to provide land, air, sea, and special forces with the C⁴ capabilities required to respond rapidly to regional crises and to operate effectively as a Joint Force Command. In support of these objectives, the Department is continuing to acquire new C⁴ systems to support conventional warfare.

For example, the development and testing of upgrades to the Department's primary air surveillance sensor, the Airborne Warning and Control System (AWACS), will continue in FY 1994. The production of radar system improvements to extend the detection range of AWACS against modern fighter aircraft and cruise missiles will begin in FY 1996. Similar improvements are being made to the NATO AWACS fleet under a cooperative program.

The Army's multifaceted effort to modernize its Army Tactical Command and Control System (ATCCS) is also progressing. The first level of capability (Block I) of the Forward Area Air Defense (FAAD C²) component has successfully completed testing and is being implemented, while the next level (Block II) is being developed. Fabrication of the Ground Based Sensor for FAAD C² has been completed and will undergo developmental testing during FY 1994 and operational testing in FY 1995.

The communications element of the ATCCS is comprised of the Single Channel Ground and Airborne Radio System (SINCGARS), Mobile Subscriber Equipment (MSE), and the Army

Data Distribution System (ADDS). The Army is reviewing its requirements for ADDS in view of the changes in the threat and expects to determine a course of action in FY 1994. MSE provides a rapidly fielded communications backbone for commanders on the ground in quick reaction operations and is fielded to over 95 percent of the forces. The SINCGARS combat net radio provides jamming resistance that is lacking with the current VHF radio system, the VRC-12, which has no frequency-hopping capability. Over 50,000 radios have been fielded amongst the Services to date, and the FY 1994 procurement will add 20,000 more.

The Joint Tactical Information Distribution System (JTIDS) will provide a high capacity data communications capability to support defense against aircraft and tactical ballistic missiles. Low rate initial production of JTIDS terminals has been approved, and full rate production is planned for FY 1995. A related cooperative program, the Multi-functional Information Distribution System, will result in smaller JTIDS compatible terminals for space-constrained U.S. and NATO platforms.

The Navstar GPS is revolutionizing navigation for both military and civilian users. This satellite-based system proved of enormous benefit in Operation Desert Storm where it was largely responsible for the precision of coalition force movements and the relative safety with which they were conducted. The operational constellation is scheduled to be completed at 24 satellites in FY 1994.

To better support conventional warfare, significant progress is also being made in improving interoperability between C⁴I systems. New policy to further this objective was issued this past year. The policy promotes the use of common standards, reinforces joint review of C⁴I systems to ensure they support joint force requirements, and requires more stringent interoperability testing. This will help ensure that the forces have the flexibility and interoperability to conduct effective task force operations in support of foreign policy objectives.

TELECOMMUNICATIONS

The Department has undertaken integration and modernization activities to transform the way information is developed, used, and shared in order to meet joint warfighting needs into the 21st century. These activities include the establishment of a Department-wide integrated information infrastructure, programs to implement the Joint Staff's C⁴I-for-the-Warrior concept, the CIM Initiative, and the integration and migration of demonstrated technological advances into operational capabilities.

Common to each of these activities and essential to their overall success is the need for a seamless, secure, reliable, and cost-effective telecommunications infrastructure. This global infrastructure must be robust and agile to ensure the ready availability and transfer of information to meet worldwide military contingencies across the spectrum of potential military conflict. This same telecommunications infrastructure is critical to realizing substantial productivity gains.

The integrated telecommunications infrastructure called the Defense Information System Network (DISN) is comprised of integrated satellite and terrestrial, government owned and commercial leased communications, and certain Department-wide value-added services that are

an integral part of the telecommunications services platform. This includes such basic services as voice, video, data, imagery, and graphics transmission, as well as organizational and individual messaging, video-teleconferencing, and electronic data interchange. Overarching the system are standardization, security, and technology insertion modernization activities for meeting the warfighters' C⁴I requirements and supporting routine departmental mission support and business requirements. As the technology matures and as the DISN evolves, multiple, openly competed acquisitions will be used to create a global grid of information transfer capabilities with an overarching integrated network management structure.

Defense Intelligence

There has been increasing recognition of the need and value of intelligence for military operations. Operations Desert Shield and Desert Storm highlighted many of the needs, as well as deficiencies, that were present at the time. Over the past year, major strides have been made in aligning the policy and structure required to focus and implement future program development.

In a significant redirection from the past, the Department has established a joint review process with the Director of Central Intelligence of both the National Foreign Intelligence Program (NFIP) and Tactical Intelligence and Related Activities (TIARA). This was created to better integrate the national and defense communities to be supportive of user needs at all levels. Through this detailed process, Joint NFIP and TIARA program and planning guidance to the Services and defense agencies was issued for the first time. Key components of this guidance included direction to better integrate programmatic and budgetary information, provide for the interoperability of capabilities in support of military operations, and ensure essential improvements for imagery support, as well as to develop a new U.S. intelligence program and budget structure to better reflect user needs and priorities.

To accomplish these objectives, DoD has effected the following:

- A Common Budget Framework has been established to permit meaningful examination and reviews of capabilities and programs of all NFIP and TIARA within a common structure using common definitions.
- For standardization and interoperability, an Intelligence Systems Board with visibility into all U.S. intelligence activities was established. This Board will develop the planning and strategies needed to implement critical corrective actions for the interoperability of key systems.
- Similarly, a program is being established to implement an imagery dissemination capability. Operations Desert Shield and Desert Storm highlighted the critical need of military commanders to access timely imagery for mission planning, battle damage assessments, and weapons system employment. The improvements under this program will provide communications upgrades to current systems and provide for the dissemination and easy access to imagery by theater and tactical operational users.

- The Department has consolidated airborne reconnaissance activities under the Defense Airborne Reconnaissance Program. A wide range of capabilities, to include EP-3 aircraft, Rivet Joint aircraft, UAVs, sensor upgrades, and imagery ground processing systems have now been consolidated under one program manager
- In a move strongly endorsed by the Director of Central Intelligence, the Department has consolidated Human Intelligence (HUMINT) functions, creating the Defense HUMINT Service as a field operating activity under the Defense Intelligence Agency. In order to improve support to the warfighters, HUMINT Support Elements will be created at each combatant command to provide support in peacetime and in war. In addition, the creation of operating bases overseas and in the United States will provide the organizational structure necessary for streamlined and responsive HUMINT support.
- The Combined Intelligence Publishing Service will be the intelligence analog to the Defense Printing Service. Restructuring and standardizing defense intelligence printing will yield significant efficiencies while ensuring production of time-sensitive, intelligence-related materials.
- Several years ago, the Director of Central Intelligence established the Nonproliferation Center (NPC) as a clearinghouse for intelligence information on proliferation. In 1993, DoD determined, along with the Director of Central Intelligence, that the diverse and dynamic intelligence issues associated with nonproliferation and counterproliferation activities would be more thoroughly addressed if DoD personnel were assigned to key NPC positions. These personnel will offer operational, strategic planning, and technical expertise to the NPC.
- Improvements to DoD intelligence support for law enforcement agencies engaged in counterdrug activities were made in FY 1993. The National Drug Intelligence Center, a facility supported by DoD for use by the Department of Justice, was opened in July. The Anti-Drug Network that allows interchange of drug related data among law enforcement agencies also was updated to bring it into compliance with government and commercial standards.

As shown by these efforts, the Department has implemented major changes over the last year, in coordination with the Director of Central Intelligence, to improve the management and implementation of intelligence programs and capabilities. This process will continue to ensure that programs and resources are streamlined and focused to address critical deficiencies and the needs of military commanders.

Counterintelligence and Security Countermeasures

COUNTERINTELLIGENCE (CI)

CI is an essential warfighting element that provides critical force protection in support of military operations and protection of key weapon systems and technologies. CI activities and resources provide significant support to counterterrorism, counternarcotics, positive intelligence (HUMINT), and clandestine operations. CI identifies the threat posed by traditional and nontraditional adversaries which target U.S. plans, programs, systems, resources, and operations and recommends appropriate countermeasures.

With the demise of the Soviet Union, the breakup of the Warsaw Pact, and radical political changes taking place throughout the world, the CI mission has new challenges as U.S. forces support peacekeeping, humanitarian assistance operations, arms control treaty support, and the counterproliferation of WMD. To ensure that CI can support new national and defense requirements in a fast changing environment, the Department has initiated business improvement process initiatives, also known as re-engineering, to improve efficiency of CI functions through restructuring and information technology.

CI has been an integral part of U.S. military operations in Somalia, the former Yugoslavia, the blockade of Haiti, Southwest Asia and the Eastern Mediterranean protecting U.S. forces from clandestine and covert threats. CI personnel regularly accompany military units exercising and operating in foreign countries, provide dedicated support to defense agencies, and have on-call responsibilities for locations designated in military contingency plans. With the increase of foreign ownership of U.S. defense corporations and the coproduction by U.S. firms with foreign entities, CI services are required to support the nation's industrial security program.

SECURITY COUNTERMEASURES

Security countermeasures safeguard classified and sensitive information and materiel that are critical to U.S. warfighting capabilities. Significant initiatives are under way to reduce security infrastructure costs in accordance with reasonable risk management. These initiatives are based on objective threat assessments and coherent policy guidance for classification, personnel security, physical security, industrial security, technical security, and operations security.

For the National Industrial Security Program (NISP), the Department is implementing the Presidential mandate to establish a single integrated program for protecting U.S. classified information required by industry. Development of common security standards in the NISP operating manual will eliminate duplicative requirements and achieve reciprocity for clearance investigations and inspections. Security requirements in defense contracts are being streamlined through the Acquisition Systems Protection initiative which provides cross-program threat analysis to focus security planning on essential elements requiring classification or other safeguards. There are also new initiatives for strengthening the defense against economic espionage and proliferation of sensitive weapon technologies by more closely monitoring foreign ownership, control, and influence at classified contractor facilities.

DoD is also providing extensive support to a national task force which is revising the entire classification system and is participating in the Joint Security Commission's review of security

practices in both the Department and the intelligence community. These efforts are designed to provide a realistic and cost-effective approach to security countermeasures in the post-Cold War era.

INFORMATION SYSTEMS SECURITY

Technological advances and the increasing demand for information fusion capabilities are fueling each other at an increasing pace. The proliferation of high-speed, multimedia, global networks is providing opportunities for unprecedented data fusion, including the merger of classified and unclassified information over the same network backbone. While increases in operational efficiency and significant economic savings are apparent, there is also a whole new set of security vulnerabilities created by this integration of communication and computer networks. It is imperative that confidence remain high in emerging information systems by ensuring availability, integrity, and confidentiality of information and information systems.

In order to meet the security challenge and implement a national strategy for information systems security (INFOSEC), a joint effort among DoD and other government departments and agencies, as well as industry, is under way to accomplish the following:

- Develop and implement policies to ensure that security is an integral part of the initial design phase of all systems and that it is addressed throughout system development and life cycle;
- Develop and issue a security architecture that enables a cohesive, coordinated approach to system integration and interoperability while ensuring system security;
- Participate in the development of commercial standards to promote the incorporation of security mechanisms and adopt INFOSEC standards and protocols;
- Develop and accelerate availability of INFOSEC technology, products, and tools;
- Establish a modernized electronic key management system in order to counter the HUMINT threat to current paper-based key systems and to provide enhanced operational responsiveness and interoperability;
- Develop and implement uniform INFOSEC certification and accreditation standards, guidelines, and directives; and
- Promote awareness of security threats and issues, improve INFOSEC education and training programs, and provide a framework for threat dissemination, incident reporting, and analysis.

Information Management

The President, along with the Vice President, stated in the report *Technology for America's Economic Growth, A New Direction to Build Economic Strength*, that "The federal government

must use technology to improve the efficiency of its own operations.” The report further stated that “Many of the government’s policies in such areas as privacy, information security, records management, information dissemination, and procurement will be updated to take into account the rapid pace of technological change.” The report addressed many other aspects of process improvement, infrastructure, and technology advancement. The Department fully supports these initiatives and is positioned to meet these objectives through information management initiatives such as CIM and the Defense Information Infrastructure (DII).

CORPORATE INFORMATION MANAGEMENT

The defense CIM initiative is the most comprehensive information program ever conducted by any government or industry organization. The initiative includes programs to strengthen and standardize the information technology programs of the Department of Defense. More importantly, it includes innovative programs to help defense managers streamline their processes and make better use of information technologies where they are appropriate.

The CIM initiative consists of five major components:

- **Functional Process Improvement** — The re-engineering of defense processes to make them more effective.
- **Data Administration** — The standardization of data so it can be shared among functions and passed freely among the military departments and defense agencies.
- **Information Technology Policy and Standards** — The provision of a consistent, open basis for defense information systems, both in hardware and software.
- **Migration of Automated Information Systems** — The elimination of duplicative automated information systems to support any given function.
- **Department-wide Integration of Information Applications** — The consistent direction for sharing of information and systems across functions.

Functional Process Improvement, also known as Business Process Re-engineering, helps defense managers eliminate non-value-added steps and to perform essential steps more effectively. The premise of business process re-engineering is that those who perform functions are those who should be in charge of changing them. From a defense-wide point of view, this means that the leadership of each function — who is the Secretary of Defense’s principal staff assistant for that function — has the responsibility for streamlining the processes within his or her purview. Operationally, this means that processes are best examined by those who perform them. Defense managers are encouraged to examine the ways they do business, including all the underlying assumptions. DoD now has about 230 process re-engineering efforts under way in such diverse areas as medical logistics, force mobilization, management of the electronic spectrum, and military base management and operations.

The Deputy Secretary of Defense has tasked each functional area with determining their standard information systems and eliminating other legacy systems. The goal is to complete the transition

to standard systems within three years. This includes all defense areas, including administration, finance, logistics, personnel, health, command and control, and intelligence. Each functional area will also standardize data within three years. Presently, DoD has tens of thousands of data descriptions; this number will be reduced to one per item. Standardization will aid integration across defense functions. Interagency inquiries or data transmissions will be aided by consistent formats and system specifications.

DEFENSE INFORMATION INFRASTRUCTURE

The DII initiative was established to create a protected, interoperable, and cost-effective end-to-end information transfer capability. The objectives of the initiative are to: (1) revolutionize information exchange, defense-wide; (2) strengthen the ability to apply computing, communications, and information management capabilities effectively for accomplishment of the Department's mission; and (3) significantly reduce information technology burdens on operational and functional staffs. Successful implementation will enable operational and functional staffs to access, share, and exchange information worldwide with minimal knowledge of communication and computing technologies.

The Department has started on a revolutionary and ambitious road to improve management of information. This is a necessary course of action for many reasons. Information is a vital resource of modern warfare and will become even more so in the future. DoD must ensure it creates the capability to protect, exchange and combine critical information between and among command and control, intelligence, combat support, simulation and training, and business systems. Concurrently, DoD must create organizations and systems that are agile and flexible to change. Finally, it must be done in a cost-effective manner to support downsizing within the Department.

C⁴I Cross-Functional Integration

The Department is currently working on significant new initiatives to better integrate C⁴ and intelligence. As a first step, the Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD(C³I)) is preparing to integrate all C⁴ and intelligence within the organization. This integration will provide the Department an integrated assessment of C⁴I which can be used to improve management and program oversight of these critical Department business processes. In response to a Defense Science Board recommendation that DoD establish an Architect for Military Information Systems, the ASD(C³I) has also established a working group to scope and bound the architect's responsibilities and to determine activities and time frames for implementing an overarching Department information architecture.

Information warfare is a means to not only better integrate C⁴I, but also to address the comparative effectiveness of a potential adversary's C⁴I. It consists of the actions taken to preserve the integrity of one's own information systems from exploitation, corruption, or destruction while at the same time exploiting, corrupting, or destroying an adversary's information system and, in the process, achieving an information advantage in the application of force. Thus, information warfare is the aggregation and better integration of C⁴, C⁴ countermeasures, information systems security and security countermeasures, and intelligence.

Information warfare provides a method of better organizing and coordinating efforts to ensure an optimized information system responsive to the very demanding information requirements inherent in a smaller force structure, a rapid response capability, and advancing military technologies such as deep strike and precision guided weapons and enhanced mobility of forces. Information warfare is an integrating strategy that makes better use of resources to provide for a better informed force — a force that can act more decisively increasing the likelihood of success while minimizing casualties and collateral effects.

The Department has developed and promulgated a broad DoD policy for information warfare. The military departments, Joint Staff, and affected defense agencies are acting on this policy, developing doctrine, and reorganizing, as appropriate, to better address information warfare issues. For example, the Air Force has recently established an Information Warfare Center in San Antonio, Texas. DoD has also identified required resources and has begun to stand up a small organization charged with the centralized planning and coordination of information warfare matters on Department-wide basis.

The C⁴I-Related Defense Agencies

DEFENSE INFORMATION SYSTEMS AGENCY

The Defense Information Systems Agency (DISA) continues to fill a leadership role over a broad range of critical activities supporting DoD C⁴, intelligence, security, and information management initiatives.

In this role, DISA is providing support for the C⁴I-for-the-Warrior concept to satisfy joint warfighting needs, provide seamless access to information, and facilitate a real-time picture of the battlefield. DISA has initiated implementation of the Global Command and Control System (GCCS) as an evolutionary improvement in the Department's command and control capabilities. Consistent with the objectives of C⁴I-for-the-Warrior, DISA has initiated definition of a detailed migration strategy for the transition of multiple legacy systems to a family of common systems supporting joint operations. This C⁴I systems migration initiative will be key in guiding the evolution of the GCCS.

As the single manager of DII, DISA has completed a substantial restructuring to establish an information system utility as a first major step toward DII implementation. The utility is being implemented via two principal initiatives: (1) consolidation of DoD's information processing facilities to achieve significant savings in operating costs, and (2) implementation of the Defense Information System Network (DISN). To this end, data processing center consolidations are under way and significant progress is being made in consolidating and reducing the cost of telecommunications networks as an initial step in DISN implementation. Substantial progress has also been made on two key DISN value-added network services: the Defense Message System and Electronic Commerce/Electronic Data Interchange.

DISA has continued its efforts in support of DoD information management initiatives. DISA serves as a primary agent for the technical implementation of CIM. DISA formally opened a Functional Process Improvement Center in September 1993 to provide DoD-wide support for all

aspects of business process re-engineering and has continued defining the migration strategy for systems supporting DoD functional business areas.

Key initiatives in support of defense intelligence are also being pursued by DISA. The Defense Information System Security Program, jointly managed by DISA and the National Security Agency (NSA), is making significant contributions in the areas of C⁴I business support and the DII utility systems, as well as in the areas of INFOSEC operations, training, and technology. Collaborative efforts have been initiated and strengthened to improve integration of intelligence and operations. Initiatives are also under way to integrate and consolidate communications requirements of the intelligence community for integrated support via the evolving DISN.

DEFENSE INVESTIGATIVE SERVICE

The Defense Investigative Service (DIS) has two primary missions: (1) conducting personnel security investigations leading to the granting of a security clearance to military and civilian personnel of DoD and its contractors, and (2) overseeing security administration in the defense industry. While demands for DIS services have not declined at the same rate as force reductions, DIS has been able to cope through the application of CIM initiatives, consolidations and other organizational changes, and judicious use of individual contract suppliers. During FY 1993, DIS conducted 121,119 investigations for TOP SECRET access and 458,562 investigations for SECRET access and Military Service entrances.

In the Industrial Security Program, DIS is responsible for ensuring that the cleared employees of contractors performing on classified defense programs maintain the integrity of government secrets in accordance with established laws and regulations. DIS is working with industry and other government agencies to implement the NISP, mandated by Executive Order 12829. This program should standardize government security requirements imposed on industry. In addition, the military departments have been transferring inspection responsibility for Special Access Programs to DIS, and increased foreign involvement in U.S. business has created a surge in foreign ownership control and influence situations that require substantial attention.

DIS also continues to play a meaningful role in the Department's efforts to counter espionage by both friendly nations and traditional adversaries. Through these efforts, more comprehensive and timely counterintelligence information is made available, both to DoD personnel and industry security managers, in order to more quickly detect and prevent the compromise of defense technology secrets.

DEFENSE MAPPING AGENCY

The Defense Mapping Agency (DMA) is the Combat Support Agency responsible for the production of mapping, charting, and geodesy (MC&G) products and services for the CINCs and for providing geospatial data supporting weapons and systems in DoD. DMA also carries out statutory responsibilities for providing nautical charts, navigation data and update notices supporting safety of navigation. DMA ensures interoperability of MC&G support to the C⁴I systems used among warfighters through the coordination of MC&G standards among the Services.

In the mid-term, DMA will enhance the responsiveness of its production system by developing the capability to use alternate sources, potentially including imagery and materials from the former Soviet Union, as well as commercially available hardware and software when appropriate. Portions of that system will be modified to enhance flexibility to support two nearly simultaneous MRCs. In addition, DMA will establish MC&G data standards which will allow the data to be rapidly disseminated and used by all the Services.

DMA will pursue the capability to provide MC&G users with access to Global Geospatial Information and Services. This technology will allow the users to receive electronically transmitted data and exploit the information based on their specific needs. DMA will also pursue technology to improve accuracy of advanced systems in target locations.

DMA is building partnerships with the newly independent states of the former Soviet Union and promoting democracy in Eastern Europe. DMA has entered into long-term agreements for cooperation in MC&G with Estonia, Latvia, the Czech and Slovak Republics, Hungary, and Poland. Negotiations are under way in Albania, Bulgaria, Lithuania, and Romania, with new initiatives planned with the Ukraine and Russia.

DEFENSE INTELLIGENCE AGENCY

The changing world security environment and fiscal pressures have combined to challenge the Defense Intelligence Agency (DIA) and the entire military intelligence community to redefine relationships, systems, and resources brought to bear in providing effective intelligence support. Over the past year, a number of initiatives illustrate the efforts undertaken to meet these challenges.

First, the Department has restructured DIA to serve as the institutional base for the coherent management of military intelligence. DIA has established National Military Intelligence Centers for collection, production, and infrastructure support that will functionally manage intelligence efforts throughout the military intelligence community to ensure that resources of the future are not wasted.

This fundamental restructuring is not limited to the resources of DIA, but also encompasses the consolidation of Service intelligence organizations and ensures functional integration of intelligence capabilities across-the-board. It has affected the reallocation of intelligence resources at the Combatant Commands with the consolidation of theater intelligence assets into command Joint Intelligence Centers. The combatant commanders' capabilities are also being strengthened through the full implementation of on-site Defense Intelligence Support Offices from DIA.

Critical to the success of these restructuring initiatives is a seamless communications interface among all levels of decisionmaking from the national level to the tactical level. The Joint Worldwide Intelligence Communications System (JWICS), and its companion system, the Joint Deployable Intelligence Support System (JDISS), provide this interface as the backbone for military intelligence exchange and communication. Both JWICS and JDISS were fielded early in support of contingency operations and are still being tested under rigorous operational conditions.

NATIONAL SECURITY AGENCY

As the CINCs' intelligence needs continue to carry high priorities, the intelligence community is developing complementary ways to more effectively use tactical and national intelligence assets in peacetime to address those needs. Intelligence assets continue to be refocused away from the traditional strategic targets to potential hot spots among various countries throughout the world. Intelligence support to military operations is being more closely integrated with the CINC or Joint Task Force C⁴ structure it is intended to support. Also, the trend is toward intelligence being provided by U.S. and other nations' intelligence sources, analyzed in multinational fusion cells, and provided to multinational or coalition military commands.

NSA, as a Combat Support Agency, is involved in the foregoing activities as a function of its SIGINT mission. Working closely with the commands, Services, and the Joint Staff, NSA has continued to improve its support to military operations. NSA possesses a quick reaction capability to deploy personnel and/or equipment in response to a crisis or contingency. During the past year, NSA has actively supported CINCs and deployed Joint Task Forces involved in military operations around the world.

In each instance, NSA has provided tailored intelligence support and, in concert with other intelligence agencies, has participated in the National Intelligence Support Team (NIST) concept to ensure a fused effort in supporting warfighters with intelligence that is responsive and in a usable format. NSA and NIST have proven versatile and flexible in responding to specific requirements of the supported command by refining intelligence support, associated communications infrastructure, and information flow.

NSA, as the DoD INFOSEC Manager, also develops and orchestrates national INFOSEC strategy efforts with the goal of creating and maintaining the security infrastructure necessary to protect and support U.S. national interests. Chief among these activities are network systems security engineering, electronic key management, and global network security management.

CENTRAL IMAGERY OFFICE

The Central Imagery Office (CIO) was chartered in June 1992 as a joint DoD and intelligence community organization. The CIO's mission is to ensure responsive imagery support to an expanding base of imagery users. Since its creation, it has promoted improved interaction and corporate relationships between imagery producers and users through an integrated United States Imagery System (USIS). As the functional manager of the USIS, the CIO is improving the availability and value of imagery to operational and intelligence customers. Some examples include:

- Developing policy and procedural recommendations concerning decompartmentation and declassification of satellite and airborne imagery;
- Reviewing national and tactical imagery exploitation management to develop a corporate-like structure for exploitation activities, improve training, make imagery product lines more responsive to customers, and improve ways of applying new technologies; and

- Instituting procedures and exercise support to operating military forces to allow them to gain confidence and experience in the use of national imagery reconnaissance information.

The CIO achieved these innovative and effective corporate, architectural, and procedural improvements by leading and promoting continuous imagery community interaction with imagery users. All components of the USIS are striving toward a common framework of knowledge and connectivity to respond to shifting global priorities, altered policy, advancing technology, and growing requirements.

Conclusion

C⁴I systems are making and will continue to make major contributions in meeting threats posed by dangers in the national security environment. Within the reality of reduced defense spending, the Department has a C⁴I program which addresses the challenges of the 1990s and beyond. C⁴I initiatives will aid the Department in improving joint operations and managing forces in peace or war. These initiatives strengthen the Department's ability to deal with the increasing pace of change and the emerging requirements for more efficient and cost-effective force management capabilities associated with a new national security environment.

Defense Budget

DEFENSE BUDGET

Introduction

The Fiscal Year (FY) 1995 defense budget requests funds for the people, materiel, and programs needed to counter the dangers emergent in the new security era and to foster America's long-term safety and well-being.

The FY 1995 budget begins implementation of the Department's Future Years Defense Program (FYDP), covering FY 1995-99. As required by law, details of this FYDP will be sent to Congress, so that it can see the long-term plan of which the FY 1995 budget is a part.

Seeking a Balanced Defense Program

The responsibility of DoD leaders is to craft the best possible defense program with the resources appropriated by Congress. The FY 1995 budget request meets America's defense requirements; it also fully accommodates the President's ambitious fiscal and domestic objectives that will ensure America's long-term security and well-being.

The watchword for DoD budget planning this year was balance — striking a balance among many competing and worthwhile defense requirements. Balance had to be achieved not just among the Military Services, but across other categories as well. A balance had to be achieved between current needs and investments for the future, active duty and reserve component forces, and a multitude of valid combat enhancements among other things. The entire Department participated in the process of determining this balanced program.

DoD FYDP Funding Level

When the Bottom-Up Review (BUR) was completed, the Department found that the BUR program exceeded the President's spending levels by a total of \$13 billion over the FYDP period. Secretary Aspin committed to finding the remaining \$13 billion during the normal budget review for the FY 1995 budget and the FYDP. Reductions were made to many programs to achieve this goal. During the fall, two developments complicated the budget review.

First, Congress provided a pay raise for federal employees, whereas the Administration had proposed a pay freeze in FY 1994. The consequence of the pay raise was to increase funding requirements over the FYDP period by over \$11 billion. This was a real bill that had to be paid because the pay raise was mandated by law.

Secondly, the rate of inflation in future years was projected to be higher than was estimated at the time the FY 1994 budget was developed. Because of this change, it was estimated that DoD would need about \$20 billion more to pay for the BUR program over the FYDP period. Unlike legally mandated pay raises, these inflation estimates are likely to change several times during

the year and may well result in inflation cost growth below the \$20 billion over five years now estimated.

President Clinton reviewed these factors in December. At that time he reaffirmed his commitment to the BUR program. He also directed the Office of Management and Budget to increase the overall DoD budget over the 5-year period by \$11.4 billion to provide for the effects of the pay raise over the FYDP period. However, the President opted not to budget for the multiyear inflation bill, which may or may not come due.

In order to implement the President's directives, the Department took two actions. It incorporated the full cost implications of the pay raise provided in FY 1994, and it repriced the BUR consistent with current economic estimates. These actions resulted in a defense program that exceeds the President's defense budget levels in the FY 1996-99 period by about \$20 billion. Options to deal with this matter will be considered in developing the FY 1996-2001 FYDP — when updated inflation's projection will be available.

The President and the Department of Defense remain firm in their commitment to the BUR and the need to properly finance that program. The Department has taken the appropriate steps to implement the President's decisions for the FY 1995 budget, and further changes will be made during the next program review.

Individual DoD programs and activities all have been properly priced based on current estimates of inflation. DoD leaders are confident that the forces and capabilities reflected in the FYDP can be purchased for the monies projected. The Department used realistic projections for future costs, procurement schedules, likely savings, and other issues.

The Defense Topline

In an odd-numbered year, the defense budget normally would be the second year of a biennial request. However, there was no FY 1994-95 biennial budget, since the incoming Administration barely had time to make needed changes in the first year of the defense plan left by the Bush Administration. The President's April 1993 budget was only an initial step toward devising a new defense program that reshapes U.S. military forces and programs for the new security era. The FY 1995 submission is the first defense budget to reflect fully the Administration's priorities.

The FY 1995 DoD budget request is \$252.2 billion in budget authority and \$259.2 billion in outlays. Spending in the President's budget for all the FYDP years is shown in Table VI-1.

Table VI-1

National Defense (050) Topline (Current \$ Billions)						
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
BUDGET AUTHORITY						
DoD (051)	249.0	252.2	245.4	240.2	246.7	253.0
DOE* & Other	11.9	11.5	11.9	11.8	12.0	12.1
Total 050	260.9	263.7	255.3	252.0	258.7	265.1
OUTLAYS						
DoD (051)	267.4	259.2	249.1	244.6	244.7	245.5
DoE & Other	12.5	11.5	11.9	11.8	11.9	12.0
Total 050	279.8	270.7	261.0	256.4	256.6	257.5
* Department of Energy						

Guidance for Specific Program Decisions

For the final program and budget decisions, several guidelines were followed:

- The size and composition of the U.S. military must be adjusted to reflect the new dangers of the new security era.
- The high quality and morale of America's uniformed men and women must be maintained through sound provisions for recruiting, pay, quality of life, and other programs and policies affecting them and their families.
- To deal with possible global contingencies, the readiness of U.S. forces must be kept high, with strong budget support for training, operations, and maintenance.
- The weapons and supporting systems of U.S. forces must remain technologically superior to likely foes through carefully planned modernization and upgrading.
- The survival of critical elements in America's defense industrial base is an important national interest, and DoD must contribute substantially to that survival.
- The U.S. defense infrastructure (bases, facilities, and support organizations) remains too extensive for the projected force size and declining defense budgets.
- Changes to defense management and acquisition practices must be made, and can yield budget savings and other benefits.

Summary of Program and Budget Decisions

The FY 1995 budget request and FYDP restructure America's armed forces to fit the post-Cold War era. Changing force levels are shown in Table VI-2.

Table VI-2 Reductions in U.S. Force Structure			
	FY 1990 ^a	FY 1994 ^a	FY 1997 ^b
Army Division (active/reserve)	18/10	12/8	10/ ^b
Navy aircraft carriers (active/reserve)	16/0	12/0	11/ ^b
Carrier air wings (active/reserve)	15/2	11/1	10/ ^b
Total Naval battle force ships	546	387	345
Fighter wing equivalents (active/reserve)	24/12	13.4/8.7	13/7
Nuclear-powered ballistic missile submarines	33	16	18
^a End of fiscal year force levels			
^b To be determined			

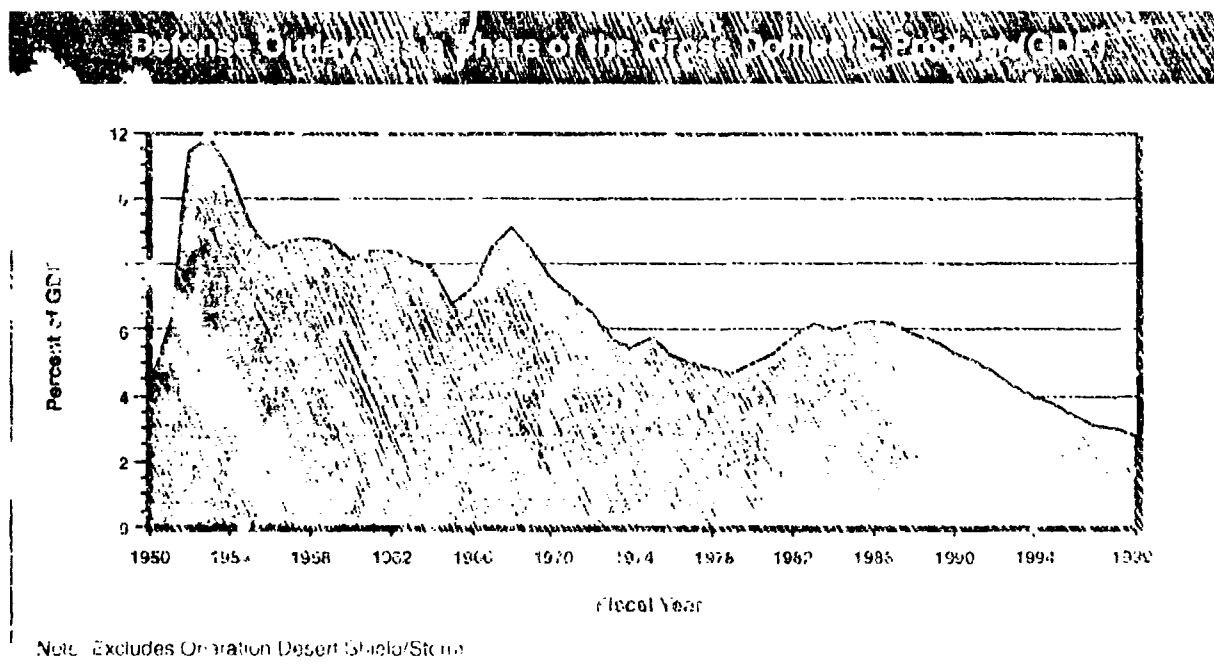
The Marine Corps will maintain three active divisions and one reserve division, three active and one reserve aircraft wings, and associated active and reserve combat service support.

Current plans call for active duty military end strength to fall to 1,525,700 in FY 1995, a decline of 30 percent from a post-Vietnam peak of 2,174,200 in FY 1987. In FY 1995, Reserve personnel levels are planned to be 15 percent below FY 1987. In FY 1995, DoD civilian strength will fall to 873,400 — about 23 percent below its FY 1987 post-Vietnam peak. This planned decrease reflects both the reduced U.S. military end-strength and DoD plans to streamline defense infrastructure and improve management.

Defense Budget Topline Trends

The requested FY 1995 DoD budget authority is, in real terms, 35.4 percent below FY 1985, the peak year for inflation-adjusted defense budget authority since the Korean War. (See Table VI-3.) Under the President's budget, in FY 1999 the cumulative real decline since FY 1985 will reach 42 percent. As a share of America's gross domestic product, DoD outlays are expected to fall to 2.8 percent in FY 1999, well below any time since before World War II (see chart).

DoD Budget Authority (Dollars in Billions)				Table VI-3
Growth Year	Current Dollars	Constant Dollars	Real Growth Percentage	
1985	286.8	390.5	—	
1986	281.4	373.2	-4.4	
1987	279.5	359.2	-3.8	
1988	283.8	351.7	-2.1	
1989	290.8	346.7	-1.4	
1990*	290.9	336.7	-2.9	
1991*	276.0	304.2	-9.6	
1992*	272.2	294.0	-3.4	
1993*	267.3	279.5	-5.0	
1994	249.0	254.4	-9.0	
1995	252.2	252.2	-0.9	
FY 1985-95 real change: -33.4				
* Excludes cost of Operation Desert Shield/Storm				



Avoiding Bow-Wave Funding Problems

In the Bottom-Up Review and subsequent program decisions, the Department took account of the consequences of current decisions for defense spending in the year 2000 and beyond. The goal was to prevent current decisions from producing large debts that would have to be paid in future defense budgets. For example, the Department scaled back the program to develop new combat aircraft to eliminate a looming bow wave. There were more aircraft programs than could have been afforded when they would have entered service in the next decade. This was fixed, without jeopardizing America's future aircraft superiority, while at the same time including full funding for the V-22 Osprey.

Another bow-wave example is the ballistic missile defense (BMD) program. The global defense system would have saddled the nation with very large acquisition costs in this decade and the next. The redirected BMD program will provide a robust theater missile defense capability at a savings of about \$20 billion in FY 1995-99 and will save another two or three billion dollars per year in the next decade.

Congressional Support for a Wise Restructuring of U.S. Defense

Decisions to streamline and improve America's defense posture cannot be achieved without congressional support. Even though workers in their states may be hurt, members of Congress will continue to be asked to approve DoD plans to reduce unneeded support operations, shift work to less expensive private contractors, change acquisition practices, and dispose of materiel surpluses. Only with this kind of streamlining can the nation's military power be sustained sufficiently.

Members also will be urged to minimize the addition and earmarking of funding not included in the President's budget. DoD leaders need as much flexibility as possible to meet the most pressing needs of America's armed forces. Especially with defense budgets continuing to shrink, the Department's leadership is committed to maintaining complete cooperation with the Congress, a partnership for the most prudent allocation of America's defense resources.

Conclusion

The 1990s are evolving as a decade in which international affairs undergo transformation and America enlarges and transforms its concept of national security. In its stewardship over the resources devoted to securing U.S. national interests, the Department seeks to proceed with the vision and prudence needed for this time of historic change.

Statutory Reports

Part VII

REPORT OF THE SECRETARY OF THE ARMY

America's Army is a successfully changed and changing institution. It is no longer the Army of the Cold War. It is a power projection force, a values based institution of enduring strength and world-class potential for the 21st century. The Army continues to implement a series of initiatives, begun over the past several years, to posture itself for the future. We have made significant changes in doctrine, force structure, manning, logistics, and stationing as well as myriad other issues. In the Department of Defense (DoD) Bottom-Up Review, critical decisions have been rendered to guide the Army in its continuing role in the national defense. Today our Army is trained and ready, an historic reversal of the pattern of post-war demobilizations which have resulted in a less capable and less ready force. We are moving not just into a new century, but into a new era. The strategy for this shift is subsumed in the watchwords continuity, change, and growth.

Continuity

The United States Army's record of service to our nation exemplifies the continuity we nurture. The fundamental purpose of the Army is to fight and win the nation's wars, and must remain so. An enduring legacy of competence, valor and fidelity has earned the Army the respect of the citizens we serve. Since its inception in 1775, our Army has responded to every call of the American people. In war and peace, at home and abroad, our discipline, dedication, and duty ensure success. America's Army has played an important role in the development of our nation, beginning with the first action at Lexington Common through the resounding victory at Yorktown. In addition to its successes on the battlefield, America's Army has provided vital support to communities wrecked by natural disasters. After the Chicago fire of 1871 and the San Francisco earthquake of 1906, the Army played a major role in returning these communities to normalcy. Similarly, the Army recently responded in the aftermath of hurricanes and tornadoes and during last summer's floods by providing critical assistance. We are an Army of professionals and citizen-soldiers, everyone a volunteer. We understand our role as an Army in a republic and we offer that ethic as a beacon to emerging democracies throughout the world. The Army's core competencies and tradition of excellence serve us well today as we sort through unique missions and new demands on our resources. The last 20 years of hard work and discipline, coupled with 218 years of experience, have produced the best, most capable Army in the world. Our commitment to values and the legacy of our service to the American people provides the foundation that enables us to change and to grow.

Change

Our Army is making a dramatic shift to meet the challenges of the 21st century. Ironically, as the Cold War ended, the world became even more complex. As a result of world events and the disintegration of the global bipolar structure, the missions the Army executes are more numerous and complicated than at any time in the last 20 years. The scope of our daily commitments is telling -- from disaster relief along the banks of the Mississippi, to peace enforcement operations in Somalia, to overseas presence on the Korean peninsula. All of these challenges are being met with the professionalism and esprit that mark the premier land force in the world.

Today's Army, though smaller, still must be capable of meeting growing requirements. Humanitarian assistance, peacekeeping, peace enforcement, and deterrence, added to the inherent responsibility to conduct combat operations, require a trained and ready force. Clearly our training program is the key to meeting these burgeoning demands. Training remains the cornerstone of readiness and, therefore, is the Army's top priority. Perhaps the most significant challenge for the Army today is to sustain a high quality, capable force in the face of dynamic change. Of all the lessons learned from the Army's recent combat experiences, the most compelling is this -- the Army will fight as it is trained to fight. Fundamental to the Army's mission is the necessity to prepare for future wars rather than the last war. Today, units conduct realistic, challenging, focused training at home station and at the Combat Training Centers (CTC) to prepare to fight the nation's wars and to prepare for operations other than war. To support the training program the Army makes extensive use of training aids, devices, simulators, and simulations. Simulations include the Combined Arms Tactical Trainer family with its lead program, the Close Combat Tactical Trainer, which will integrate the training of platoons, companies and battalions in a virtual environment and the Family of Simulations to train battalion through corps staffs in battle planning, synchronization and execution. The Army's National Simulation Center at Fort Leavenworth, Kansas, is taking the lead in standardizing protocols and databases for use by all Army simulations and is the Army's central agency for requirements and definition of constructive simulations as it applies to training. Through such innovative programs, we are ensuring that the training and readiness of our Army is refocused to today's missions and that it remains at high levels.

A smaller Army also means an increased reliance on the Army Guard and Reserve which, in turn, means additional training requirements. To meet this challenge the Army has organized and prioritized force packages of essential reserve units and will designate 15 Army Guard brigades to participate in an enhanced combat brigade program that will sustain these units at a higher state of readiness. Specific programs to assist this effort are being implemented throughout the force. One of these programs, BOLD SHIFT, is designed to improve the readiness of early deploying Army Guard and Army Reserve units through improvements in the planning, scheduling, and execution of training by associating these units more closely with an active component unit. As a result, in the future, more missions (especially combat support and combat service support) will be shifted to more capable Guard and Reserve components. The National Guard Bureau's project STEADFAST and Army Reserve project PRIME support similar objectives. The need to integrate fully the capabilities of the reserve components with active forces has become even more important in this era of declining resources. Simply stated, we cannot execute major deployments, sustain operations or go to war without participation of the Guard and Reserve components. The improvement of their combat readiness remains a task of utmost importance to the success of America's Army.

To accommodate geopolitical and fiscal realities, considerable physical change has taken place. For instance, since 1989, the Army has released more than 400,000 Active, Guard and Reserve soldiers and civilians. Active, Guard and Reserve divisions and major units continue to be deactivated or consolidated. By the end of next year, two thirds of the Cold War Army in Europe will have been withdrawn, and force levels in other overseas locations, aligned to congressional and treaty mandated ceilings, will be at historic lows. Additionally, in December 1993, the Secretary of Defense announced a major restructuring of the Army National Guard and Army Reserve. This announcement culminated a two and a half year process during which all

three components — Active, Guard and Reserve — worked together to forge a stronger, seamless partnership. In addition to meeting end strength requirements for the Reserve components, this agreement realigns combat, combat support and combat service support units.

As manning levels are reduced, the Army's infrastructure is being scaled back, and in some instances eliminated, to meet our future needs. To date, the Army has closed a total of 67 CONUS and 380 overseas bases, with 15 CONUS and 187 overseas installations remaining to be closed or reduced in scale. In addition, a variety of modernization programs have been terminated. As a result, the Army's procurement programs are at their lowest level in 20 years. As a percentage of the gross national product, today's Army budget is the smallest since the establishment of the Department of Defense in 1947.

Growth

In order to keep pace with these developments, the Army recently revised the intellectual foundation for its operations. We published a new FM 100-5, Operations, both to accommodate new strategic realities and to ensure continuity. This manual reflects how the Army thinks about its mission to fight and win the nation's wars. It is the Army's keystone warfighting doctrine. FM 100-5 addresses the full range of military operations while emphasizing joint operations as the basis for conducting military campaigns and a wide range of operations other than war. Acknowledging for the first time a fact of American defense policy since the Spanish-American War, the manual stresses the importance of mobilization and deployment operations. While resetting the intellectual moorings for the Army, we also have embarked on a series of significant changes to prepare the Army for its future role. The Army has reshaped itself to be a power projection, CONUS-based force, designed to meet 21st century requirements. At the same time, we maintain forces in critical regions, most notably Korea and Europe, to provide regional stability and forward bases for contingency operations, operations other than war, and army-to-army programs that support the growth of democracy.

The Army has committed heavily to a process, called the Louisiana Maneuvers (LAM), to investigate and manage growth, as well as to technology-based Battle Labs to evaluate the capability of the reshaped force. LAM provides a means for the Army to think about its profession and responsibilities to the nation; to practice its roles and missions; to develop and explore options; to assess and direct progress; and to provide a framework for decisions about people, equipment, force structure, and doctrine. Simulation technologies are assisting us to make wise strategic investments and management decisions about the Army. The Army also has created six Battle Labs to investigate important issues which can enhance our future capabilities and to stimulate acquisition reform. These include Early Entry, Mounted Battlespace, Dismounted Battlespace, Command and Control, Depth and Simultaneous Attack, and Combat Service Support. The labs are electronically linked to control, direct, and guide change to the benefit of the Army and the nation. By providing a focal point for civilian technology transfer, the Battle Labs facilitate rapid prototyping and user evaluation to reduce risk in fielding new systems.

A critical element for the Army as it grows into the 21st century is continuous modernization. We must retain our technological advantage in order to overmatch opposing forces in any future

crisis. We have shifted from a focus on systems to one of capabilities in five functional areas for prioritized development. These areas include winning the information war, protecting the force, projecting and sustaining the force, providing precision fires throughout the depth of the battlefield, and dominating the maneuver battle. Additionally, the power projection capability of our Army must be improved to meet future demands. These improvements include the fort-to-port infrastructure requirements of the CONUS forces we need to deploy, the sea and air lift capabilities of the Air Force and Navy, and the communications upgrades that will link the CONUS support elements with the deployed force.

America's emerging strategic posture requires that we develop the strategic mobility means to deploy the force rapidly. The commencement of our nation's plan to build Large, Medium Speed Roll-On/Roll-Off (LMSR) strategic sealift ships for Army use, coupled with the acquisition of enhanced airlift capability, is critical to the necessary improvements of the Army's deployment capabilities. Also key to executing the new concept for power projection is the prepositioning of equipment both on land and afloat. On land the Prepositioning of Materiel Configured to Unit Sets (POMCUS) in regions of critical interest will continue to be an important part of our rapid reinforcement and deployment concepts. Additionally the Army has begun to place equipment afloat to support contingency operations anywhere in the world. We are establishing a global system of prepositioned sets afloat and ashore for the warfighting CINCs to use in response to crisis. These sets of equipment will serve multiple CINCs and provide flexibility to our power projection capability. Finally, the Army has revised FM 100-17, Mobilization, Deployment, Redeployment and Demobilization, to provide a doctrinal basis for the Army's power projection concept and is already in the process of a current update to capture ongoing initiatives.

To meet the increasing demands for the deployment of forces worldwide, we are refining logistical support activities. FM 100-16, Army Operational Logistics, is being revised to provide the doctrinal framework for these changes. Concepts being addressed will include Theater Distribution Management, containerization, in-transit visibility, and total asset visibility. Additionally force tailoring of selected combat service support units will be addressed to cover the initial phases of projected unit deployments.

Demands of Peace

As the Army recasts itself for future missions, a cautionary note is appropriate. While initial indicators such as sustained quality of new recruits, promotion rates and the retention of high quality personnel are currently satisfactory, the stress and turbulence in units to meet increased commitments are intensifying and the propensity to enlist is down. Only a world class organization could reduce by over 400,000 soldiers and civilians in just two and a half years while maintaining its readiness; but to sustain the pace of long-term contingency missions requires three units for each requirement -- one training to go, one in execution, and one recently returned to refit and recover. These conditions, coupled with the Army's strategic requirement that it be ready to fight two nearly simultaneous major regional conflicts, necessitates that we proceed with care to ensure that we can meet future requirements. Moreover, the ability to mobilize Army National Guard and Army Reserve units rapidly has become even more critical to the deployment capability of our reshaped force. Increased

commitments mean that America's Army — active, guard, reserve and civilian employees must respond.

Perhaps the most significant danger to near-term readiness is the funding of current operations worldwide. The basic account for paying the daily readiness costs of our Active Army, (Operations and Maintenance, Army) is being depleted to pay for contingency operations, such as in Somalia. Modernization programs already have been curtailed to accommodate reduced resource levels. It is important that the technological advantage necessary to employ and protect a smaller force not be jeopardized.

Closing

America's Army is executing a sound plan to reshape itself and grow into the 21st century. We are accommodating the geopolitical realities of a changing world as well as exhibiting the prudence to proceed at a measured rate to sustain a combat ready force. We are maintaining an acceptable level of combat readiness as we implement the changes required of us all. The United States Army remains ready and able to continue its tradition of selfless service to our nation. When the American people call, we are prepared to give them the decisive victory they expect.



Togo D. West, Jr.
Secretary of the Army

REPORT OF THE SECRETARY OF THE NAVY

Force 2001: Rightsizing Naval Forces

CHALLENGE AND OPPORTUNITY

Our nation rides the crest of history with the Cold War behind us and unparalleled opportunities for peace ahead. The next seven years will show whether we reacted to events or controlled our destiny -- whether we saw only challenge or grasped opportunity.

In a world where oceans cover 75 percent of the earth's surface, where 80 percent of the global population lives in littoral regions near the sea, and where 99 percent of U.S. import-export tonnage moves on the sea, the U.S. Navy and Marine Corps have a special responsibility to this destiny. In this regard, the Department of the Navy is working hard to grasp the opportunities of this new security environment so that the nation can benefit from expanding democracy and free markets around the globe.

In this new era, however, increased regional dangers to U.S. interests and an increased likelihood of smaller, littoral conflicts accent the unique mobility, rapid crisis response, sustainability, and offshore presence capability naval forces possess. At the same time, growing fiscal constraints mean difficult and hard choices. To highlight the scope of the challenge, in the past two years, the Department has decommissioned more ships than there are ships in the combined navies of France and the United Kingdom. While the reduced threat and fiscal constraints dictate that we become smaller, our security responsibility to the nation remains considerable. Therefore, to have the right Navy and Marine Corps to support the evolving new National Security Strategy, it is paramount today that we rightsize the Naval Service. That is, while prudently restructuring, we must retain those key capabilities necessary for joint warfighting, quick crisis response, forward presence, and a Total Force active and reserve personnel mix that will ensure readiness and sustainability under any current or predicted scenario -- the consequences of doing less are unacceptable. This great challenge also means that the Department of the Navy's long-range program must recapitalize future naval forces, active and reserve, with fewer, but more capable, high-quality platforms and equipment.

OUR VISION

In 1993, the Department of the Navy began to carry out a new direction for the Naval Service. As described in the white paper, *From the Sea*, the new direction provides the nation with a Navy and Marine Corps team that meets the challenges of regional conflict, supports emergent national needs, and -- at the same time -- provides the long-term capability to wage open ocean warfare. The overall programmatic concept to support the new direction of the Naval Service is our Force 2001. While the debate over force levels and future capabilities continues, Force 2001 recognizes that the U.S. Armed Forces will become smaller. At the same time, continuing fiscal constraints and a reduction in the overseas presence of Army and Air Force units mean increased reliance on the Navy and Marine Corps for overseas presence, deterring conflict, and crisis response. Consequently, the Secretary of Defense's Bottom-Up Review specifies the continued

need for American naval forces to protect the nation's global interests and endorses their unique capabilities. This requirement to maintain overseas presence, as well as to meet wartime requirements, adds special considerations to the rightsizing of naval forces.

How will Force 2001 be crafted? Four principles will guide our efforts to provide the nation with the right naval forces to support national security needs and interests. They are:

- **Personnel** — Quality recruitment, superior training, and esprit, enhanced by the Department's commitment to them.
- **Readiness** — Deter crisis or control it through crisis response.
- **Technology** — Compensation for smaller quantities with the tools to deter or succeed in conflict.
- **Efficiency** — Commitment to the taxpayer to reduce overhead and implement increased effectiveness through Total Quality Leadership.

PERSONNEL — KEEPING FAITH WITH OUR PEOPLE

Every day, dedicated, motivated, highly skilled Sailors and Marines, active and reserve, make untold thousands of personal sacrifices to ensure that national needs are promoted and interests are preserved in the more dangerous regions of the world. Therefore, first and foremost, our strategy as we go about the task of rightsizing the Naval Service for the times depends on the continued recruitment and retention of such high quality personnel. In that regard, the Department of the Navy acknowledges that our force is not just a matter of numbers of people, but also highly trained and spirited Sailors and Marines given the right tools to do their jobs in an environment where they can live and work efficiently.

As we properly size our career force, separation incentives, a clear example of keeping faith with our people, have been crucial in sustaining promotion and career potential for junior personnel. In Fiscal Year (FY) 1993, more than 7,500 Sailors and Marines took advantage of these incentives, and the target for FY 1994 is more than 7,000. To better effect the drawdown in the 15- to 20-year career group, during FY 1994 more than 2,000 of our people are expected to use early-out retirements. These incentives enable the Department to avoid involuntarily separating career personnel short of reaching retirement eligibility and are the right kind of support for those who have given so much throughout their years of service to our nation.

Maintaining competitive pay during the personnel drawdown is also critical to keep faith with and retain the best of our junior personnel to man the rightsized Naval Service. The 3.7 percent pay raise in January 1993 was important to keep pace with inflation. In addition, selective reenlistment bonuses and specialty pays continue to be effective in retaining those people in critical skills. Along with compensation, Quality of Life initiatives help to make up for the uniquely demanding and difficult lives of the Naval Service. In FY 1993, these initiatives contained a significant emphasis on housing, including a program to establish clear quality standards for all family dwellings. Additional emphasis continued on child care; since 1990, funding has more than doubled to improve the quality and staffing of child care.

Events during the past year continued to emphasize to the Navy and Marine Corps that an environment of respect and opportunity for all our personnel, civilian and military, active and

reserve, is an absolute necessity. Core value programs, sexual harassment prevention and awareness, alcohol and drug abuse prevention, aggressive programs for personal education, equal opportunity, and community outreach promote standards of excellence for all of our Sailors and Marines.

In anticipation of the repeal of the combat exclusion statute, the Department has prepared a comprehensive plan to fully integrate women into all possible warfare areas. Deliberate and measured to ensure success, the plan builds on the last two decades experience of women serving well in Naval Aviation and at sea on non-combatant support ships.

These initiatives are not casually taken. They will build a team of the best our nation offers, in the positions we need them, to thrive in one of our most challenging professions.

READINESS — FOR QUICK RESPONSE

In the future, naval forces will be the nation's tool for controlling crises and stabilizing events, rather than merely reacting to them. Our ability to establish the nation's presence, at the crisis site but without active intervention, will become increasingly important to the projection of U.S. influence in support of national security and economic needs. By providing naval forces for forward presence with warfighting skills, sustainability, and modern equipment to fight and win major regional conflicts, the Department of the Navy ensures the CINCs can execute quickly national command decisions in peacetime as well as war. These decisions range from humanitarian missions, to the evacuation of American citizens from hotspots, to covert surveillance of foreign activities, to strikes against aggressors who threaten U.S. national interests and allies. Credible, capable forward naval forces also build the cooperation and ties with our friends and allies that make possible coalition-building in a crisis. Operating on the international high seas, naval forces maintain U.S. presence and influence in troubled regional areas without requiring other countries to provide special basing and overflight rights. Granted, operating from the sea is a special challenge that requires a higher state of readiness than basing on land; but, it provides an extra edge, — more freedom of action for the National Command Authority. This constant readiness has a price, but the support it brings to national needs through economic opportunities, security, and positive influence with our allies and developing democracies, is critically important internationally and is a credit to the United States.

TECHNOLOGY — MAINTAIN A VIABLE BASE

A guiding principle of Force 2001 is to ensure we design a technology base for the future that safeguards the edge of our fighting forces. In the face of fiscal constraints, this is a problem that leaves little room for hesitation or error. One part of the solution to this problem is to streamline our acquisition process so it doesn't take so long to get a program from the drawing board to the Fleet. Another part is to encourage dual use technologies so that the technology base that supports America also supports America's Naval Service.

Continuing investments in basic research and advanced technology contribute to the nation's long term security. Last year, the Department of the Navy supported over 1,7000 principal researchers and 4,000 graduate students at universities, in industry, and in laboratories. Besides

working with other national laboratories, the Office of Naval Research has established a science and technology program with Russia and other republics of the former Soviet Union, thus benefitting from their work on remote sensing, low frequency acoustics, materials technology, and aerodynamic wing-in-ground effect vehicles.

EFFICIENCY — A RESPONSIBILITY TO TAXPAYERS' INVESTMENT

At home, the citizens of the United States make sacrifices to support the necessary investment in the Naval Service — their investment in the Navy and Marine Corps is one that must be respected and must pay off in increased security, economic dividends, and a safer world where Americans and others are free to pursue their legitimate interests and customary values. An especially important investment by American citizens is the strong, accessible, and flexible Navy and Marine Corps Reserve. Reserve forces, our citizen Sailors and Marines, provide daily peacetime support to the active-duty force, thus ensuring an effective Total Force whose Reserve resources can be quickly assimilated during crises to augment the active component and sustain critical capabilities.

Key to respecting the investment of Americans in their Naval Service is the need to ensure that the money they invest is wisely spent. Consequently, the Department of the Navy will mirror the efforts of the Vice President's National Performance Review and will fully support Department of Defense efforts to effect management and acquisition reform. Current acquisition procedures often take too long and waste money on unnecessary oversight and regulation. Additionally, reform must change the acquisition process to take full advantage of dual-use technology so that the commercial industrial base that supports America can also support America's defense.

During FY 1993, the Department of the Navy realized that, in order to stay within budgetary limits, we must fundamentally change the way we do business. Both the white paper, ... From the Sea, and our programmatic concept, Force 2001, demonstrate our joint focus. To implement that focus, the Chief of Naval Operations established a new assessment process of Joint Mission Areas (JMAs). These areas include Joint Strike, Joint Littoral, Joint Surveillance, Joint Space and Electronic Warfare/Intelligence, Strategic Deterrence, Strategic Sealift/Protection, and Forward Presence. There are also three Support Areas (SAs): Readiness, Support and Infrastructure; Manpower and Personnel; and Shore Training.

The primary objective of the JMA/SA assessments was to develop a thorough understanding of how naval forces contribute to the nation's joint force capabilities and to strengthen the link between the Naval Service's joint operational capabilities and its budget. After the assessments were completed, an Investment Balance Review (IBR) brought the desired force levels in line with fiscal constraints. The result became our Department of the Navy Program for FY 1995-99, and, despite hard decisions and sacrifices, met the Secretary of Defense's fiscal guidance.

In addition, the Department's program achieved the objective of aligning programs to national needs as follows:

- It refocused the emphasis from global conventional war with the Soviet Union and Warsaw Pact to a force structured to meet regional dangers and opportunities;
- It demonstrated responsibility to the taxpayer with an affordable program that makes significant strides toward recapitalization; and
- It balanced investment with resources for all priorities of the Department's program, i.e., people, rightsized forces and infrastructure, and a technology base to meet the challenges of the future.

SIZING NAVAL FORCES FOR THE TIMES

The Department of the Navy aggressively pursued rightsizing its force structure in 1993 to provide a Navy and Marine Corps Team consistent with the Department's vision as detailed in ...From the Sea and validated by the Secretary of Defense's Bottom-Up Review. To meet this objective, the Department accelerated retirement of older, less capable ships and aircraft while maintaining the centerpieces of forward presence and power projection — the aircraft carrier battle group and the amphibious battle group with Marine Expeditionary Forces. With the total number of combatant ships and submarines decreasing, modest recapitalization and modernization programs have been designed to ensure future high quality platforms, more capable than those retired.

Notably, two aircraft carriers, nine ballistic missile submarines, two nuclear attack submarines and 17 other ships of the battle force were retired during the year. Twenty new ships were commissioned, including the third Wasp-class LHD, three Aegis cruisers, the third Aegis-guided missile destroyer, a Trident submarine, and four improved Los Angeles-class nuclear attack submarines. Mine warfare forces received three new Avenger class mine countermeasures ships and the lead ship of 12 new Osprey-class mine hunting ships. Fleet logistics forces were modernized with one new Henry Kaiser-class oiler. Finally, the first four Cyclone-class special operating forces patrol craft were delivered. Additionally, the Department issued new construction contracts for nine ships, including four Aegis destroyers and the Bon Homme Richard (LHD 6). Finally, advance procurement of long lead materials for CVN-76 was initiated.

New aircraft additions in FY 1993 centered around the continued recapitalization of the carrier based strike-fighter force and replacement of older model rotary wing aircraft in both the Navy and Marine Corps inventories. These procurements included 36 additional F/A-18C/D Hornets. Significantly, these aircraft, along with the F-14 Tomcat modernization program, are key components to bridge our sea based air combat capability into the 21st century.

New rotary wing acquisitions included 20 MH/CH-53 heavy lift helicopters and 12 AH-1W Cobra attack helicopters, 12 SH 60B Lamps MK III helicopters, nine SH 60F carrier-based ASW helicopters, and seven HH 60H Seahawk variant helicopters for carrier-based logistics, combat search and rescue, and Naval Special Warfare Support. As part of the Medium Lift

Replacement program, the tilt-rotor V-22, a potential replacement for the Marine Corps' aging CH-46E helicopters, has moved from the full-scale testing phase to the engineering, manufacturing, and development phase.

A key tenet of the Department of the Navy's force shaping is the infusion of new technology. This effort in FY 1993 was centered around research and development on ship self defense systems, upgrading the ability of strike aircraft, improvements in precision guided weapons, and mine warfare. An affordable program of fielding planned improvements to existing forces also continued through the year, including the Vertical Launch System (VLS) and Tomahawk Weapon System for the Spruance-class destroyer, introduction of the surface-to-air improved Standard Missile Block III for Aegis combatants, MK48 ADCAP Torpedo shallow water upgrading, and improvements to the Standoff Land Attack Missile for strike-fighter aircraft.

NAVAL AVIATION, SUBMARINES, AND SEALIFT

FY 1993 marked a year of significant decisions in naval aviation, sealift, and submarine programs. The Department's long-range naval aviation plan underwent several significant and fundamental changes during the year to include the decision to retire for fiscal reasons the entire inventory of A-6 medium attack aircraft by the end of FY 1997. The F-14 air-to-ground upgrade and the expanding inventory of F/A-18C/Ds will provide a significant carrier strike capability, but with reduced range and less adverse weather capability than the A-6. Longer term, the Department is going forward with planned improvements to the F/A-18 airframe with an E/F version that will extend the range and improve the weapons carriage capability. Concurrently, at the Secretary of Defense's direction, the Navy and the U.S. Air Force are working jointly to develop future strike weapons systems technology.

Marine Corps aviation also experienced major changes during 1993 as the last Marine A-6 squadron transitioned to the F/A-18. The result of this transition is a Marine Corps tactical aircraft population centered around two modern airframes, the F/A-18 Hornet and the AV-8B Harrier VSTOL jet. Several Marine F/A-18 squadrons have been assigned to Navy carrier air wings to fully integrate them into the evolving naval mission and to improve the utilization plan for these capable aircraft.

The long-range submarine force plan also experienced significant changes during the year due to fiscal, force level, and industrial base concerns. By 1999, the entire SSN-637 class of fast attack submarines will be retired along with most first-flight SSN-688s. Supported by the Bottom Up Review, the Department is going forward with construction of the third Seawolf-class submarine in 1996 and with design of a New Attack Submarine to support a planned 1998 construction award.

FY 1993 was a significant year for the modernization of the nation's sealift capability. Two contracts were awarded to convert five existing roll on/roll off ships to military use and for new construction of two roll on/roll off ships with options for 10 more. These 17 ships are meant to accommodate U.S. Army pre-positioning and surge requirements for heavy lift.

JOINT PROGRAMS

The Department has been aggressive in supporting a variety of joint weapons, aviation, and command and control programs in FY 1993 and will continue to do so throughout the future.

years defense plan. The most significant of these are a family of air-to-ground weapons: Joint Direct Attack Munition, Joint Standoff Weapon, and the Tri-Service Standoff Attack Missile. In the family of air-to-air weapons, the Department continued procurement of the Joint Advanced Medium Range Air-to-Air Missile, which will greatly improve the air combat capability of all the Services' tactical aircraft.

The Department began the implementation of the Bottom-Up Review findings in developing aircraft designs that meet both Navy and Air Force needs. The lead airframe in this joint service effort is the Joint Primary Aviation Training System aircraft. This versatile joint basic trainer will become the primary flight trainer for the Services.

Sea-based command and control is the most active and near-term participant in joint programs, which include the Joint Tactical Information Distribution System with companion Link 16 and the Joint Staff designation of Navy software for initial fielding of the Global Command and Control System. Another joint effort resulting in big payoffs to naval forces has been the integration of the Air Force's Air Tasking Order capability into the Fleet.

RIGHTSIZING INFRASTRUCTURE

The drawdown of the Naval Service's infrastructure commensurate with force structure reductions remains one of our greatest challenges. The President's 1993 Base Realignment and Closure Commission (BRAC 93) approved the closure of 27 major naval installations and the closure or realignment of over 60 smaller activities. It should be noted that the Department of the Navy is already in the process of closing six installations and implementing two realignments as a result of BRAC 88, and 15 installations and 20 realignments as a result of BRAC 91 (including the consolidation of Navy laboratories and fleet engineering activities into warfare centers). The net costs of a thoroughly assessed closure program in FY 1995 are estimated at \$2.7 billion. While the most recently approved actions will initially cost several billion dollars, by FY 1999 it is projected that total savings will exceed costs by about \$1.6 billion. Annual savings of about \$1.2 billion thereafter equate to the cost of one new Arleigh Burke destroyer a year.

The Department continues to work hard to match available resources to those support functions that are essential to the Naval Service. At the same time, programs for conversion of facilities will attempt to minimize the impact of infrastructure adjustments on the people and communities that have heretofore depended on these activities.

As infrastructure is rightsized, the Department continues to emphasize the quality of the environment at all our facilities. To sustain aggressive leadership in this area, the Chief of Naval Operations regularly convenes an Environmental Quality Management Board chaired by the Deputy Chief of Naval Operations (Logistics). The board meets monthly to ensure that environmental considerations are effectively addressed.

Compliance, installation restoration, and base closure actions are all addressed in the Department of the Navy's environmental budget. Indicative of the strong emphasis in this area, the FY 1994 environmental budget of \$1.8 billion is almost 38 percent higher than FY 1993. Part of that budget, \$86 million in FY 1994, is funding for clean-up of closed bases, which is expected to cost more than \$440 million over the next several years.

ORGANIZATIONAL EFFECTIVENESS

To complement the changes in forces and infrastructure, the Department has begun organizational changes to develop more coherent, integrated, mission-oriented headquarters staffs. The Chief of Naval Operations realigned his staff to parallel the Joint Staff for better interaction and efficiency. These moves, along with appointment of a two-star Marine Corps general to the Navy staff as Director of Expeditionary Operations (N85), will simplify integrated Navy and Marine Corps planning and programming, enhance joint interoperability, and better support the Unified Commanders in Chief and their Naval Component Commanders.

Operations of the Naval Service

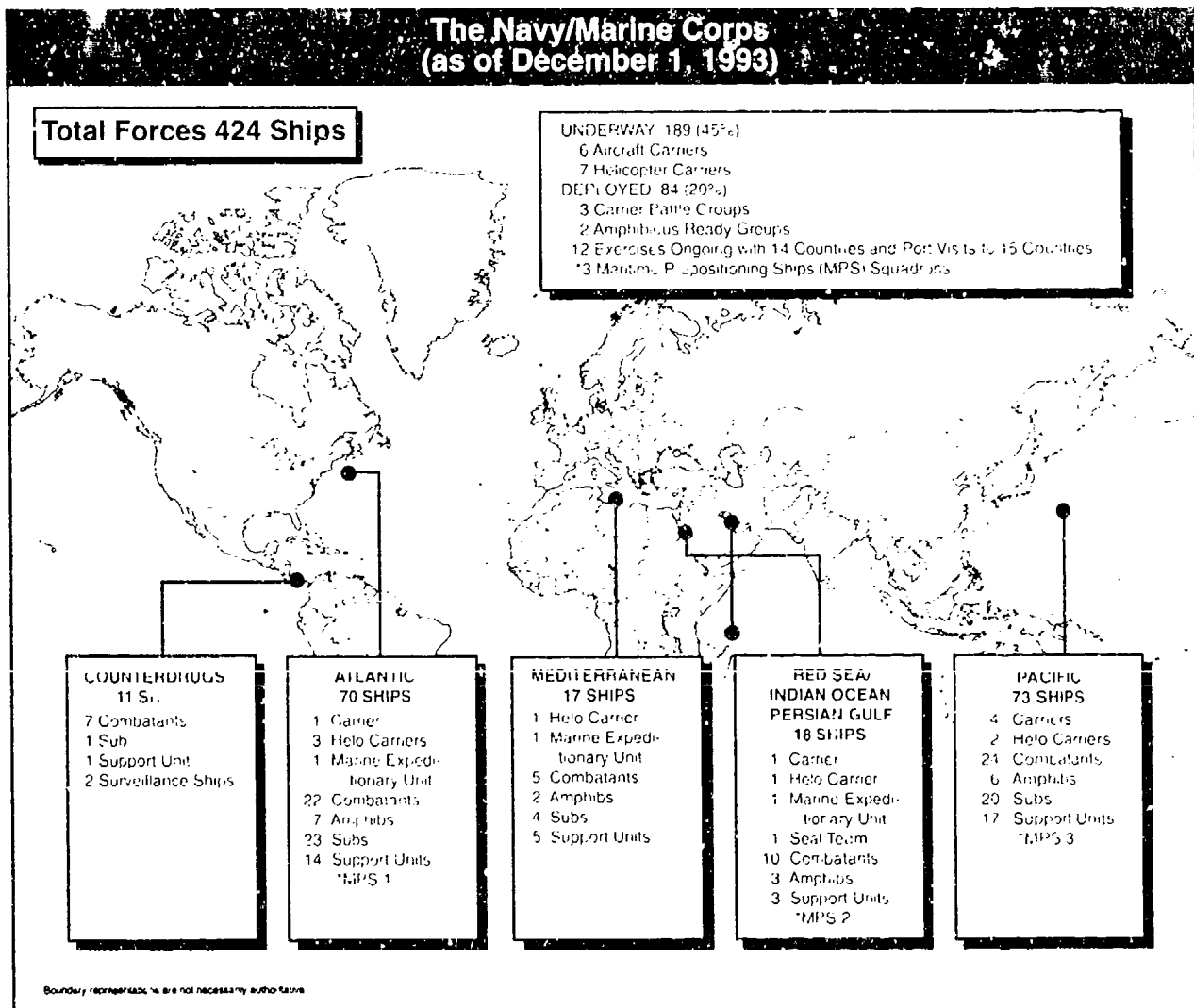
The role of naval forces in joint and international efforts to enhance regional stability and for rapid execution of National Command Authority decisions was recognized by the Secretary of Defense in the Bottom-Up Review. As fewer and fewer Army and Air Force units are based overseas, the overseas presence role of naval forces is likely to be increasingly emphasized and possibly expanded. The increasing precision, stealth, range, and capabilities of conventional systems offer new and innovative opportunities to employ naval forces in concert with political, diplomatic, and economic measures to deter aggression and foster regional stability.

NATIONAL COMMAND AUTHORITY DECISIONS

The U.S. Navy and Marine Corps are the nation's combat forces most likely to be on the scene when a crisis threatening U.S. interests erupts, and they are normally the forces that are the last to leave when a crisis abates. In 1993, naval forces were on station to deter strife and control crises throughout the seven seas. In the Persian Gulf, off Somalia, Haiti, Bosnia, or throughout the Mediterranean, Pacific, and Caribbean, naval forces were on hand. In January and June 1993, U.S. Navy warships, on orders of the National Command Authority, conducted punitive strikes on Iraq that were crucial in compelling that country to come to terms with United Nations nuclear inspection requirements.

OVERSEAS PRESENCE

In 1993, active and reserve naval forces were again called on to meet a wide range of traditional overseas presence responsibilities throughout the world as well as a growing number of new presence missions. To meet requirements, usually 40 percent of all Navy and Marine Corps forces were under way or deployed on any given day throughout the year. These forces were busy executing continuous containment and maritime interdiction operations in three regions of the world, participating in over 165 unilateral and bilateral exercises, and showing the flag through port visits in over 80 countries. Additionally, they participated in six major crisis response operations in support of both the United Nations and national interests. Most significantly, this effort was done while simultaneously executing the most aggressive reduction of forces since the end of the Vietnam War. The U.S. Navy and Marine Corps provided humanitarian assistance, conducted peacekeeping and counterdrug operations, and enforced United Nations sanctions in Somalia, the Red Sea, Persian Gulf, Haiti, and in the Atlantic.



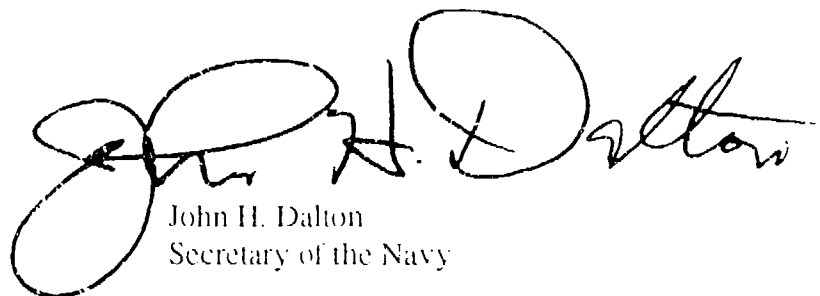
DETERRENCE

The nature of strategic deterrence continues to evolve as the United States, Russia, Belarus, Kazakhstan, and the Ukraine move toward compliance with the Strategic Arms Reduction Talks Treaties. Under these treaties, half the nation's strategic nuclear deterrent warheads will be carried by survivable, mobile, Trident submarines. On July 10, 1993, the Navy commissioned USS Nebraska, the fourteenth of eighteen Ohio-class Trident missile submarines. In 1994, ending three decades of strategic deterrence service, the final three ballistic missile submarines of the original 41 for Freedom will offload their missiles. Trident submarines, however, will continue to maintain the crucial sea-based leg of the nation's strategic triad.

Conclusion: Readiness from the Sea

As the Naval Service continues to rightsize, the missions and patterns of naval force deployments must remain responsive to national needs and interests. Consequently, the Department of the Navy will continue to develop guidance for a fiscally constrained, smaller Naval Service. The strategic vision of the Navy and Marine Corps, *...From the Sea*, sets the stage for readiness and quick response by emphasizing joint capabilities and a shift away from blue-water operations toward the presence and operations of the Naval Service in littoral areas of the world. Force 2001 turns the vision into reality with naval forces, sized to the times, ready when needed, and capable of meeting national needs and interests. The Naval Service of Force 2001 will be expeditionary, able to support joint and coalition operations across the spectrum of U.S. interests, whether by regional warfighting, peacetime presence, humanitarian assistance, multinational exercises, crisis response, or landing Marines for expeditionary operations ashore.

While reorienting the Department of the Navy's strategic thinking, the Naval Service continues to focus on readiness commensurate with funding levels, supported by a viable technology base. Readiness also means recruiting and retaining the most qualified individuals, keeping faith with our people, and giving them the tools and the training to do their jobs well. While much has changed in the world, Sailors and Marines and their readiness to defend their country remain the bedrock of the Navy and Marine Corps, today and tomorrow.

A handwritten signature in black ink, appearing to read "John H. Dalton". The signature is fluid and cursive, with a large initial "J" and "D".

John H. Dalton
Secretary of the Navy

REPORT OF THE SECRETARY OF THE AIR FORCE

The United States Air Force remains the premier aerospace force in the world, and is a critical contributor to our national security. Our mission is: "To defend the United States through control and exploitation of air and space." Our guiding construct, Global Reach - Global Power, defines five pillars of our mission: sustaining nuclear deterrence, projecting power, providing global mobility, controlling the high ground of space, and continuing to build U.S. influence around the world.

The nation has emerged from the Cold War with new challenges to our security environment. The Bottom-Up Review provides a planning framework to guide the transition from an era of bipolar focus to one that recognizes new dangers — proliferation of weapons of mass destruction, regional aggression, potential failure of political reform in the former Soviet Union, and failure to build a strong and growing U.S. economy.

These dangers are the basis for our new defense strategy, which in turn drives the size and shape of our force. Because of the enduring characteristics of aerospace forces — speed, range, flexibility, precision and lethality — the Air Force is postured to be a cornerstone of the new global strategy that focuses on the dangers of regional conflict. In any such conflict, the Air Force will provide the reach to quickly bring force to the fight. We will also provide the power necessary to gain air superiority and conduct integrated operations in support of national or coalition objectives.

To transition to this new security environment, the Air Force has undergone major changes in organization, force structure, and overhead. In building down from the Cold War, we already had a significant start in tailoring our Service to reflect the demands of the new world order before the Bottom-Up Review. The emphasis of the last three years — the Year of Organizing, the Year of Training, and the Year of Equipping — reflected the need for fundamental change. We are not finished yet, but we are moving smoothly in a direction that postures us well for the 21st century.

At the same time, we recognize that we have a major role to play in helping to provide stability to the new world order. The United States has taken positive steps to help the member states of the former Soviet Union during their transition to a more democratic form of government. Just one important example of this effort is our military-to-military contacts. Recently, General Colonel Sergeyev, the Commander in Chief of Russia's Strategic Rocket Forces, visited General Butler, his counterpart at U.S. Strategic Command. The personal relationships and constructive dialogue that result from such visits build mutual confidence and trust, acting as a stabilizing influence in our continuing arms reductions. In April 1993, we participated with Russian military forces in a joint search and rescue exercise in Tiksi, a remote location above the Arctic Circle. The purpose of this event was to demonstrate the ability to cooperatively respond to a simulated downed airliner. The results of this successful venture are significant: First, we have shown our militaries can operate together for mutual benefit. Second, the success of the exercise makes commercial use of previously unused northern airways more feasible, an outcome that has important economic ramifications for both Russia and the United States.

While we are optimistic about future relationships with the countries that once formed the Soviet Union, strategic vigilance must still be maintained — we will continue to retain forces in support

of our nation's deterrence policy. However, the current strategic environment does permit us to make significant cuts in our nuclear forces. The Nuclear Posture Review is currently studying our nuclear force structure in detail to determine long-term needs. In the meantime, we are moving toward a nuclear force that will include 500 Minuteman III missiles and a mix of nuclear capable B-2 and B-52 bombers.

To meet the regional focus of our new defense strategy, the Air Force will have a fighting force for major regional conflicts (MRC) of 20 fighter wing equivalents and up to 100 bombers. This force represents a substantial cut from previous levels — over the next few years, our combat fighter and bomber force will drop to about half the size it was just five years ago.

Our primary challenge is to keep our forces ready now and in the future while coping with declining budgets. My theme is: "Building a quality Air Force for today and tomorrow." This phrase emphasizes the need for current readiness, while recognizing the importance of modernizing our forces and preserving our critical industrial base. Acting now will protect tomorrow's readiness and sustainability.

People First

People are the key to our continued excellence. We must not underestimate the personal hardships and uncertainty resulting from the drawdown. It is my goal to put people first during this time of unprecedented turmoil. Experience has proven if we properly take care of our people, they will take care of the mission. To do this, we must ensure our military and civilian personnel have the best training, equipment, facilities, and leadership. We must not neglect the quality of life of our people and their families. One current challenge is the difficulty we face upgrading military housing in the current budget climate — Air Force leadership is committed to ensuring we do not cut corners in this vital area.

To retain our best people, we must take aggressive measures to reduce the stresses of their current challenges and to remove irritants that threaten or detract from their well-being and morale. We must also continue to attract sufficient numbers of top quality people to sustain us in the future.

The rate of change is a major source of stress on our people. At the end of FY 1986, the Air Force had over 608,000 active duty people in uniform. By the end of FY 1993, the number dropped to 444,000. In FY 1994, we will cut another 18,000, and in the following year, another 24,000. By the end of the decade, we are projected to be at 390,000 total active duty strength. The personnel drawdown has not been without pain, and it will continue to be challenging. Wherever possible, we are using voluntary measures to keep us on the right glideslope. These include waiving service commitments, paying separation benefits, and using our temporary early retirement authority. We canceled the selective early retirement board (SERB) for lieutenant colonels in FY 1994, but will still require a colonel SERB this year. Using all loss management and transition tools, we will be able to release thousands of military personnel with appropriate compensation without using a reduction in force (RIF) in 1994.

Similar measures on the civilian side will reduce the need for involuntary separations. However, civilian RIFs are inevitable at closing bases and in major programmatic reductions where cuts exceed attrition rates and incentives are unable to generate enough voluntary losses.

Despite the fact that the majority of personnel cuts have been voluntary so far, military and civilian uneasiness about long-term career stability persists. So we must continue to keep the faith with the fine men and women (both active and retired) who have chosen the Air Force as a way of life — whether fighting to keep commissaries open, maintaining pay raises commensurate with changes in cost of living, or continuing our level of health care after transitioning to the national program.

Continued recruitment of top notch people is also essential. Many of America's youth think the military is not hiring during the drawdown. In fact, quite the opposite is true — we will continue to bring in approximately 43,000 military and civilian people per year for the next several years. The force will be leaner, but career opportunities should be excellent.

Base Closures

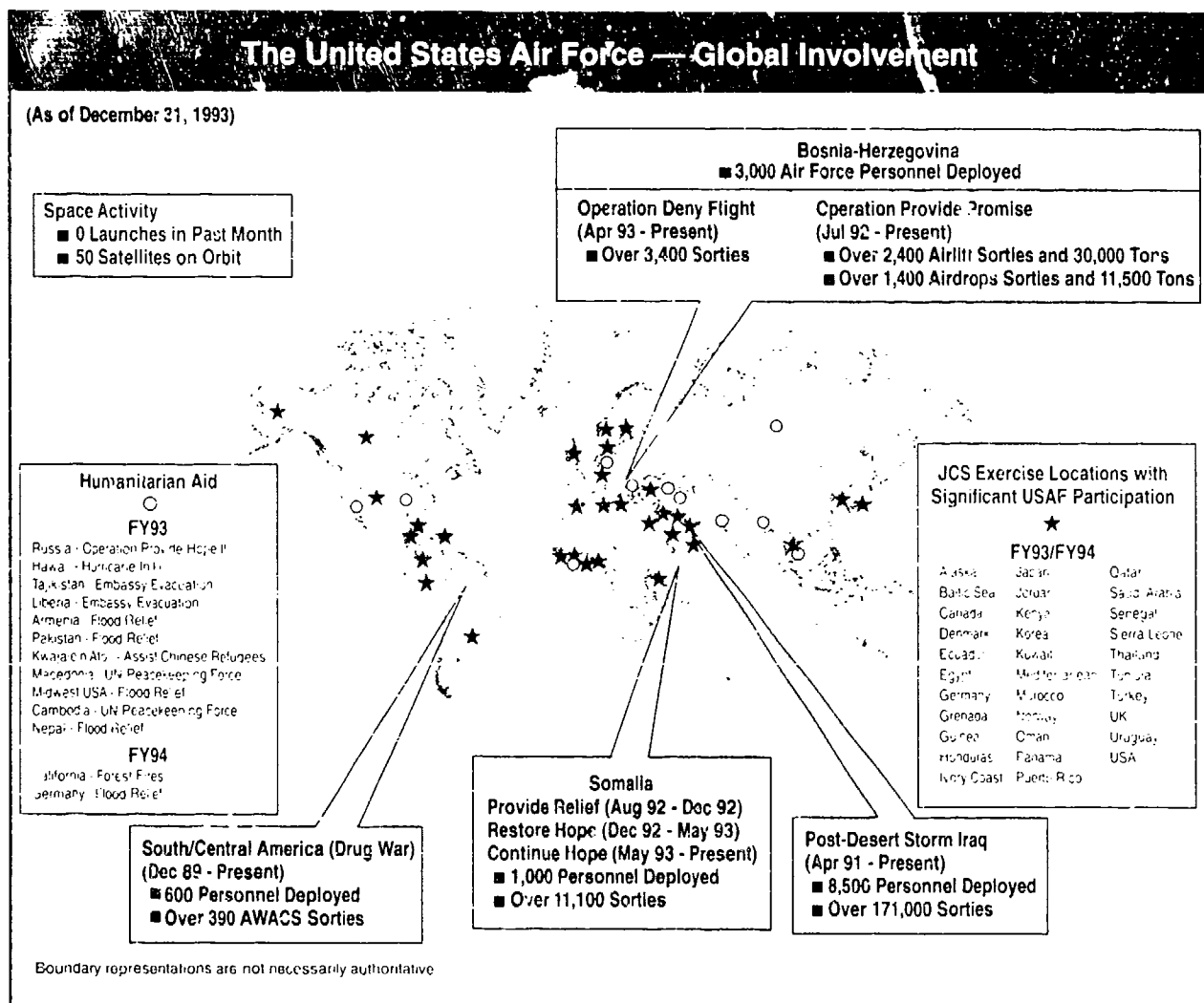
In the face of force structure cuts and personnel drawdown, base closures are essential to reduce overhead and infrastructure costs. So far, the Base Closure and Realignment Commission has identified 26 major and minor CONUS Air Force installations for closure or realignment during FY 1991-1998. Of these, 11 were closed or realigned by the end of FY 1993. However, the results of the Bottom-Up Review will not be felt until the next round of commission recommendations in 1995, after which we will further consolidate our operations for greater cost efficiency.

Overseas, we are also closing bases as our force grows smaller. In 1989, we had 52 installations abroad. That number has declined to 29 in just four years, and by 1999, our overseas bases will number only 21.

The Air Force is continuing to invest in environmental programs, particularly for bases that we are closing and handing back to host communities. Although such investment is a challenge in tight financial times, sound environmental practices are not an impediment to our mission — they are part of the mission.

Current Operations

Despite the drawdown in forces, the Air Force is more engaged today than during any period of peace in recent years. From the high ground of space, where we operate on-orbit assets in support of our worldwide commitments, to our constant vigil of the DMZ in Korea, the Air Force is actively protecting American national interests. The map below indicates the level of our global commitments and involvement in joint exercises as of December 1993.



Today the Air Force is flying armed sorties from Turkey and the Gulf region in support of the U.N. no-fly zones in Iraq. This region is still far from benign. During this last year our aircrews have been engaged by and responded to Iraqi threats both in the air and on the ground. In December 1992 and January 1993, our fighters downed Iraqi MiGs flying in violation of U.N. resolutions. As late as August 1993, our forces exchanged fire with surface threats in northern Iraq. Despite the diminishing media coverage, our Gulf involvement is still very significant. This cease-fire still presents daily risk to our aircrews, whose post-Desert Storm total sortie count is more than double the number of missions flown during the war.

In the former Yugoslavia, we and our NATO allies are acting under U.N. auspices to airland and airdrop vital food and medical supplies to provide humanitarian relief, to patrol the skies both to deny flight to potential combatants, and to provide a visible, armed presence to discourage further escalation of hostilities. To date, our Air Force has delivered more than 41,500 tons of life-sustaining cargo to the region.

In Somalia, the famine relief efforts have saved thousands of lives in a multinational operation built initially on Air Force airlift capability, and later joined by forces of the other Services and our allies. During all of FY 1993, our aircrews delivered over 63,000 tons of food and supplies, in some cases flying over 30-hour crew days with four air refuelings across the Atlantic and Mediterranean regions.

The Air Force has also been involved in a variety of other missions in 1993, ranging from domestic flood relief efforts in the Midwest, to our ongoing counterdrug mission in Central and South America. This high operations tempo directly supports America's new strategy, but our demonstrated success comes at notable cost in terms of stress on our people and their readiness to respond to major conflicts. The time away from home for people in many of our critical systems typically exceeds 120 days per year. For example, our RC-135 Rivet Joint crews average 160 days away from home per year, and many airborne warning and control system (AWACS) crews are gone 170 days per year. We are looking closely at this issue to determine what can be done to reduce the impact on our members and their families.

One point that is often overlooked is that heavy commitment to peacekeeping and humanitarian operations can detract from combat readiness. Due to the lack of training opportunities, and because the skills employed in these operations often do not correlate to critical combat skills, combat proficiency can atrophy. For example, AWACS crews and air superiority pilots spend numerous airborne hours watching and waiting, rarely getting the opportunity to practice the highly perishable skills that are required in intense, multi-dimensional air combat. These systems are not unique — the same principle applies in varying degrees to each mission area across the spectrum of theater combat operations. We have been continuously dealing with this facet of readiness since Operation Desert Storm. We have adjusted rotation schedules to minimize adverse impacts on readiness. Also, we are successfully using Reserve component units to help share the burden of these operations. We will continue to make necessary adjustments to meet these peacetime operational requirements with the goal of preserving our readiness for larger conflicts.

Ensuring Air Force Readiness

To meet our new national strategy with shrinking forces, these forces must be trained and equipped to give them the greatest possible responsiveness and combat effectiveness. Maintaining readiness during this period of enormous budget cuts is perhaps the biggest challenge we face.

In the late-1970s, much of the Air Force degenerated to a hollow force. Some of our front line aircraft sat on the ramp without engines or other critical parts. Mission capable rates for our combat units were unacceptably low. This resulted in a degradation of our flying training and combat skills.

As some senior leaders have indicated, we are starting to see warning signs again of a potential hollow force. In Air Combat Command, for example, small numbers of F-15s have been without engines as shortages of repair parts at the depots resulted in the inability to ensure the availability of spare engines at every base. Restrictions levied on the Air Force that were

intended to reduce excess inventories have done so, but they have also created parts shortages. While mission capable rates remain high, leading indicators are beginning to highlight problem areas. One such indicator is our increasing rate of cannibalization, the practice of repairing aircraft with parts from other aircraft when our parts stocks are low. While this practice may provide short term solutions, cannibalization is inefficient in terms of labor and often costly in terms of increased wear and tear.

We are taking aggressive action to ensure readiness does not decline. First, General McPeak and I have designated 1994 as the Year of Readiness to place the utmost emphasis on this crucial area. We are actively studying means of forecasting problem areas more accurately, keeping a watchful eye on leading indicators to resolve problems before they detract from readiness. One promising program is the U.S. Air Force Long Term Readiness Assessment, or ULTRA. ULTRA is a management tool that will enable us to forecast our readiness up to five years out, giving us increased warning time to adjust our course and avoid major problems.

At a macro level, our operations and maintenance dollars are very tight. Therefore, we must carefully monitor individual units and weapon systems to ensure we allocate precious resources precisely where they are needed most.

Another issue that impacts readiness is the availability of training ranges and airspace. In many cases our airspace requirements are growing to accommodate the longer weapon ranges, faster aircraft speeds, and larger composite force training requirements of our modern Air Force. To maximize readiness, we must routinely train in a manner that capitalizes on the strengths of our superior weapons systems and tactics. However, we are committed to striking a balance that will serve our legitimate operational requirements while protecting our precious environment.

Responsible inventory management is also essential. The Air Force has gotten the message on excess inventories, and unneeded inventories are coming down fast. Total inventory is already down from the FY 1989 peak of \$45 billion to \$34 billion, and we project we will meet our FY 1997 objective of \$28.7 billion in 1994. By ensuring our inventories are properly structured for our real needs, we are taking another step toward making sure our warfighting forces are both ready and sustainable.

Total Force Issues

The reserve component of the Air Force, the Air Force Reserve and the Air National Guard, continues to play a unique role in our national defense. The Guard and Reserve are assuming responsibility for the entire peacetime air sovereignty of the United States, but with fewer overall forces in light of the decreased threat. The general purpose reserve forces have been cut to restore a healthy active/reserve mix, yet these forces are taking on an increased role in both peace and wartime. In peace, we are looking for ways to increase participation of Reserve units in overseas deployments to help share the burden with the active force. In our two major regional conflict strategy, the Air Force is unique in our heavy reliance on our Reserve component units as primary forces in combat. With 10 fighter wing equivalents required for each MRC, all active and reserve general purpose fighter units must be prepared to deploy, fight, and win. Also, for the first time, the Guard and Reserves will be flying conventional B-52 and

B-1 bombers. Together, all of these changes demonstrate the country's high confidence in the professionalism and the quality of the Air National Guard and the Air Force Reserve.

That professionalism and quality have been evident as our Reserve component forces have participated in the high tempo peacetime operations around the world alongside their active duty counterparts. They have played, and continue to play, a significant role in operations in Somalia, Iraq, Turkey, Bosnia, and Central America. As the Air Force continues to reduce and the Guard and Reserve take on increased responsibilities, the challenge will be to accomplish that larger role without overburdening our citizen soldiers and their civilian employers.

Building for Tomorrow

Force modernization is crucial to our continued leadership in air and space. The C-17 is a major part of our modernization effort and will significantly improve our capability to get forces quickly to the conflict. It will fulfill the airlift customer's need for a flexible, responsive airlifter able to deliver forces and outsized equipment to small austere airfields, and to airdrop troops and equipment over an objective area. The Air Force will procure six C-17s this year toward an initial fleet of 40 aircraft as announced by the Secretary of Defense in December 1993. In 1995, we will evaluate the program's maturity and decide whether to continue C-17 acquisition or substitute an alternative nondevelopmental aircraft to meet our airlift needs as we retire the workhorse C-141.

The F-22 will provide the continued air dominance that has belonged to the Air Force with the F-15 since the 1970s. Its combination of increased survivability and lethality will provide a qualitative edge that will ensure a first-look, first-shot, first-kill capability while minimizing exposure to surface-to-air threats. Also, with the resident ability for internal Joint Direct Attack Munition (JDAM) carriage and delivery, the F-22 will possess a potent ground attack capability. This increased flexibility will allow theater commanders to more effectively employ the F-22's increased firepower in a wide range of air-to-air and air-to-surface scenarios.

Key bomber modernization programs will ensure we maintain our ability to project power rapidly, from anywhere on the globe. As part of that modernization, we delivered the first B-2 to Whiteman Air Force Base, Missouri, in December 1993 — a major milestone in aviation history. Using stealth technology, the B-2 will be able to penetrate highly defended areas and strike key strategic targets. It will also greatly enhance our ability to stop an invading enemy quickly during the opening days of a conflict. As the backbone of our bomber force, the B-1B will soon become a purely conventional bomber. The B-52H will round out our manned bomber force with its nuclear, conventional, and cruise missile capability. By bringing on line the 20 B-2s authorized by Congress, upgrading the conventional capabilities of the B-1B and the B-52H, and by adding more effective conventional munitions, we will maintain the future viability of our manned bomber force.

After the recent termination of the A/F-X and Multirole Fighter, Congress authorized funding for a Joint Advanced Strike Technology (JAST) program to define requirements for the next generation of fighter/attack aircraft. This program is headed by an Air Force general officer working for the Assistant Secretary of the Navy for Research, Development, and Acquisition.

This working arrangement will ensure the interests and needs of the Navy, Marine Corps, and Air Force are considered at every step of the program.

Our space launch vehicles also require modernization. The current systems are derived from 1960s technology, and they are costly and often unresponsive to user needs. Because the United States has not improved its capability to provide low-cost, on-schedule launch service to users, we have lost our domination of the commercial space launch arena. This has also had negative impacts on our space industrial base, infrastructure, and the costs of military space launches. We, along with NASA and the commercial sector, must step out smartly to scrub our requirements and then pursue a national launch solution that is robust, reliable, and cost-effective.

Air Force Command, Control, Communications, Computers, and Intelligence (C⁴I) policy has taken on added definition in the past year. Our overarching policy, HORIZON, is the strategy for providing warfighters with responsive, advanced C⁴I system services from present day into the 21st century. Its focus is on leading the Air Force into an era of technological innovation and sustaining a national superiority in the age of information warfare.

In keeping with my theme of building a quality Air Force, the Science and Technology Program continues as the foundation of our future military capabilities. Maintaining our technological edge requires continuing investments in research and development to produce state-of-the-art military capabilities. Emphasis on this program will result in early introduction of advanced technologies into system developments and upgrades, ensuring our technological superiority is sustained into the next century.

Acquisition Reform

This year, the Air Force has been deeply involved in acquisition streamlining and reform. As a start, we have responded to defense contractor pleas to tell us what the requirements are so we can carry out realistic planning for the long term. To this end, the Air Force compiled its first Long-range Acquisition Estimate covering over 2,000 planned procurements over \$100,000 for FY 1994 and beyond. We also provided an electronic bulletin board service where contractors can get the information they need to better support Air Force requirements.

In addition, we are working with OSD to tear down statutory and regulatory barriers to efficient and cost effective contracting throughout the acquisition process. We are deleting unnecessary military specifications and promoting the use of commercial components wherever it makes sense. The Air Force is a major player in DoD's Defense Acquisition Pilot Program, a prototype program to streamline military acquisition. Of seven DoD pilot programs, the Air Force will be responsible for four: the Joint Direct Attack Munition I (JDAM I), the Joint Primary Aircraft Training System (JPATS), the Commercial Derivative Aircraft, and the Commercial Derivative Engine.

With these programs, we intend to demonstrate that we can operate more efficiently without the excessive oversight that invariably plagues defense acquisition programs.

Finally, we are actively pursuing research and development of dual-use technologies. These technologies will not only satisfy critical military requirements, but they will help stimulate

commercial industry. These dual-use technologies span a wide number of areas, from health care to innovations in information systems technology. In recent years, industry has often outpaced the military in modern technologies, such as in the rapid evolution of semiconductors. We expect an improved relationship with business will help bring these products into military service more quickly and economically.

The Industrial Base

A strong and vital industrial base is an essential element of our national security. For years, the nation has maintained separate military and civilian industrial bases. Now, as the military becomes a smaller influence in our economy, we can no longer afford the expensive redundancy of this separation. We need to actively pursue a national industrial base strategy to bridge the gap with industry for the economic benefit of both the military and the commercial sectors. Due to the unique symbiotic relationship the Air Force enjoys with the aerospace industry, we naturally will play a lead role in this initiative.

In addition to much needed acquisition reforms and exploitation of dual-use technologies, there is significant opportunity for the Air Force to collaborate with industry on the sharing of assets. Dual-use of assets, ranging from airports to space-based communications and weather systems, will enable both the military and industry to benefit from lower overall costs. While our current national strategy assesses the emergence of a peer competitor nation as very low, a strong, competitive industrial base will sustain our nation as an economic power and provide the necessary basis for production to support our long-term military needs.

Quality Air Force

The Air Force has proven time and again we are effective at what we do, but we must continue to explore every possible means of achieving greater efficiency. While there is only so much room for further improvement through structural changes, there is always room for increased quality in how we do our job. Therefore, we are actively employing quality initiatives in our enduring quest for excellence. Quality Air Force emphasizes to each member the need to focus on the customer, or end user of our services.

Through the principle of empowerment, we have learned we can achieve enormous savings and improvements by simply trusting our people to engage their imaginations and expertise in solving each problem at the lowest appropriate level. The decentralization that accompanies this empowerment is in perfect concert with the Administration's program to reinvent government. In fact, Vice President Gore's National Performance Review singles out Air Force successes as a model to the rest of the federal government. Our successes in Quality Air Force have impacted virtually every facet of the Service, from improving acquisition to taking care of our people. We are committed to continuing our quest for quality — it may hold the key to some of our most difficult challenges.

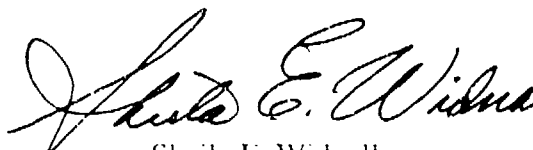
Toward the Future

The Air Force must continually seek improvements in our contributions to national security. In our organize, train, and equip role, the Department of the Air Force is responsible for

anticipating and satisfying the needs of the joint warfighting commanders while looking for ways to consolidate and save. We are already making progress in this area, from establishing joint pilot training with the Navy, to joint acquisition of our next generation primary jet trainer aircraft.

Our doctrinal contribution to the ever-developing role of aerospace power in joint operations is also important. For example, in theater air defense, we are studying the evolving aircraft, cruise missile, and ballistic missile threats to determine the best contribution aerospace power can make across the entire spectrum of defense. As technology and capabilities evolve, so must our views toward traditional roles and missions. The declining size of the U.S. military requires abandonment of the business as usual mindset — innovative thinking is key to reducing unnecessary duplication and getting the most capability from our defense budget.

These are challenging times for our Air Force, but they are also exciting times — our people are not just training for contingencies, they are globally engaged at the leading edge of our national policy. Aerospace power continues to be an indispensable pillar of America's security. Throughout the spectrum of conflict, the Air Force exemplifies the ascendant role of air and space power in wielding the nation's sword, its shield, and its helping hand. In "Building a quality Air Force for today and tomorrow," we will ensure that the forces we provide our warfighting commanders and National Command Authorities are ready to act, singly or in joint or combined operations, now and into the 21st century.



Sheila E. Widnall
Secretary of the Air Force

REPORT OF THE CHAIRMAN OF THE RESERVE FORCES POLICY BOARD

I am pleased to have this opportunity to present a brief summary of the Reserve Forces Policy Board's observations and recommendations of the past year. The Board's annual report will provide a comprehensive view of Reserve component programs and include a summary of the Board's position and recommendations on specific issues.

The Board, acting through the Assistant Secretary of Defense for Reserve Affairs, is the principal policy advisor to the Secretary of Defense on matters relating to the Reserve components (10 U.S. Code 175(c)). Representatives of each of the seven Reserve components (Army and Air National Guard, and the Army, Navy, Marine Corps, Air Force, and Coast Guard Reserve) serve as members of the Board. As an advisory body, the Board offers independent advice, as well as reports on Reserve strengths and readiness, and other critical issues relating to the Reserve components.

The Board has focused during the past year on the roles of the Reserve components in the post-Cold War era. Before addressing the future role of the Reserve components, however, it would be helpful to review some historically significant events that are illustrative of the potential missions that Reserve components are qualified to assume.

Reserve components existed before the birth of our nation; the National Guard traces its origins to 1636. The Reserve components, comprised of citizen-soldiers, are America's military cornerstone, and are designated in the first line of defense by both Title 10 and Title 32 of the U.S. Code. In fact, 23 of the 40 signers of the U.S. Constitution had military experience in either the active force or in the militia and had served in the American Revolution. These founding fathers brought to their military roles varied and unique civilian skills and backgrounds. They met and formed this government, then returned to their communities to participate in leadership roles as governors and members of Congress — some even became Presidents of this great country.

That is the rich heritage of today's Reserve component members who, following in the footsteps of the militia, are bringing that same indomitable spirit forward into their assigned military missions. Being a member of the National Guard or Reserve requires enormous dedication, professional skill, and the disciplined application of military knowledge and understanding. We are indeed fortunate to have an adequate number of outstanding citizens who are willing and able to make this commitment.

As we reflect on the last few years, we see world events that have affected virtually every man, woman, and child. The Cold War is over; the Soviet threat is gone. The Berlin Wall has crumbled; East and West Germany have been reunited. Additionally, the Persian Gulf War was conducted under America's leadership with the establishment of an unprecedented coalition of countries. Our all-volunteer force and the Total Force Policy have been validated, and the outstanding quality and capability of our military have been reflected repeatedly throughout the world.

Recently, we have seen numerous humanitarian and disaster relief efforts successfully accomplished by this same Total Force, clearly demonstrating that a crisis response capability exists without our Armed Forces — Active and Reserve — thus enabling us to simultaneously deal with foreign national security concerns, domestic civil unrest, and disaster relief operations. The underpinning of every one of these events continues to be the enormous capabilities of our Reserve components.

One of the axioms validated in the Persian Gulf War was that when the Reserve components are mobilized, we also mobilize the country's public opinion and national resolve. Polls conducted concerning support for the war showed dramatic increases in support as more of our nation's Reserve forces were mobilized. Public opinion contributed significantly to the victory. The successful outcome of that war is a great tribute to our Reserve components and to the Total Force. When we call the Reserve components, America goes to war.

During the past year, the Board has engaged in continuous discussions with the senior civilian and military leadership as it focused on future roles and missions for the Total Force. All Service components — Active and Reserve — possess capabilities that lend themselves to meeting the challenges that each of these missions entails.

The Board's vision for the Reserve components is an integrated Total Force in which the Reserve components are active participants in facing the full spectrum of new challenges to national security. Whatever the force structure, roles, missions, and functions, the Reserve components must be able to meet these four imperatives: they must be capable, affordable, relevant, and available. Together, these imperatives form the pillars which support our vision of the Reserve components' contribution to national security.

To respond effectively to this vision, the Reserve components must be properly equipped, they must be accessible to go when and where needed, they must be properly organized to support the Total Force, and they must remain cost-effective.

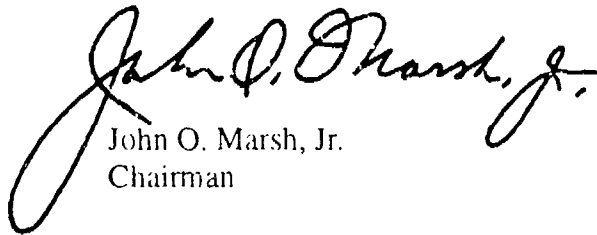
We have great challenges ahead; additional drawdowns will affect the entire defense community. We must continue the great tasks remaining before us. We must learn from history and remember when our nation reduced its military forces unwisely then later suffered because of these reductions. We must not make those same mistakes again. Likewise, we cannot be locked into the traditional visions of the past.

In another challenging period in our nation's history, Abraham Lincoln remarked that "the dogmas of the quiet past are inadequate for the stormy present; the occasion is piled high with difficulty, and we must rise to the occasion; as our case is new so must we think anew and act anew; we must disenthral ourselves and then we shall save our nation."

Now, we also must think anew and act anew, as a Total Force. The world is changing, perhaps more dramatically now than any other period in history. America is a leader among nations, and much of which it does shapes the direction of the rest of the world. Our military forces, having evolved within a democratic environment and having been built on the original charter of the militia, will continue to guarantee America's leadership role.

The Board's annual report entitled Reserve Component Programs FY 1993 is scheduled for publication in March 1994. It will provide more detailed information regarding Reserve component programs and issues.

Forwarded to the
Secretary of Defense



John O. Marsh, Jr.
Chairman

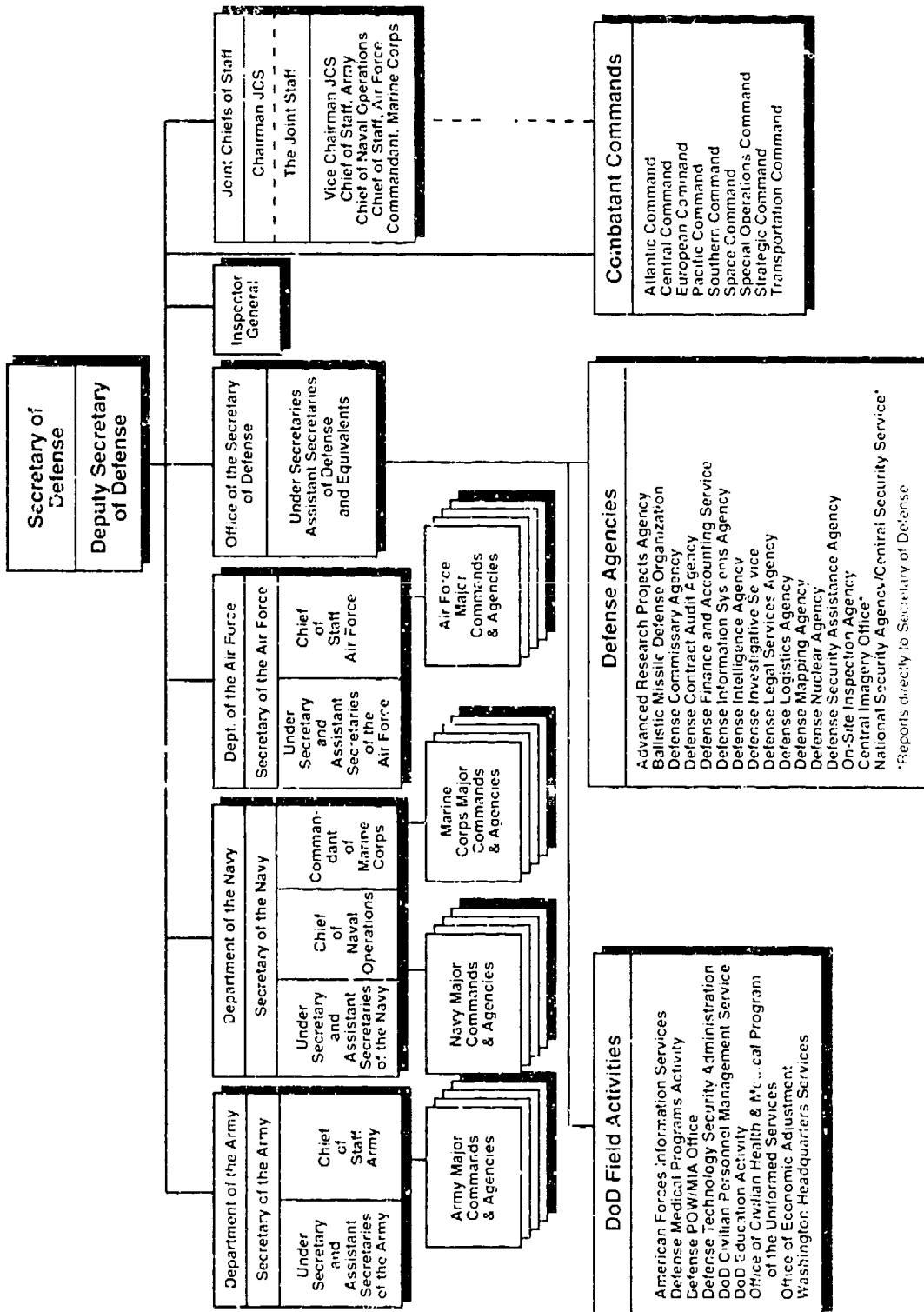


Deborah R. Lee
Assistant Secretary of Defense
for Reserve Affairs

Appendices

Department of Defense

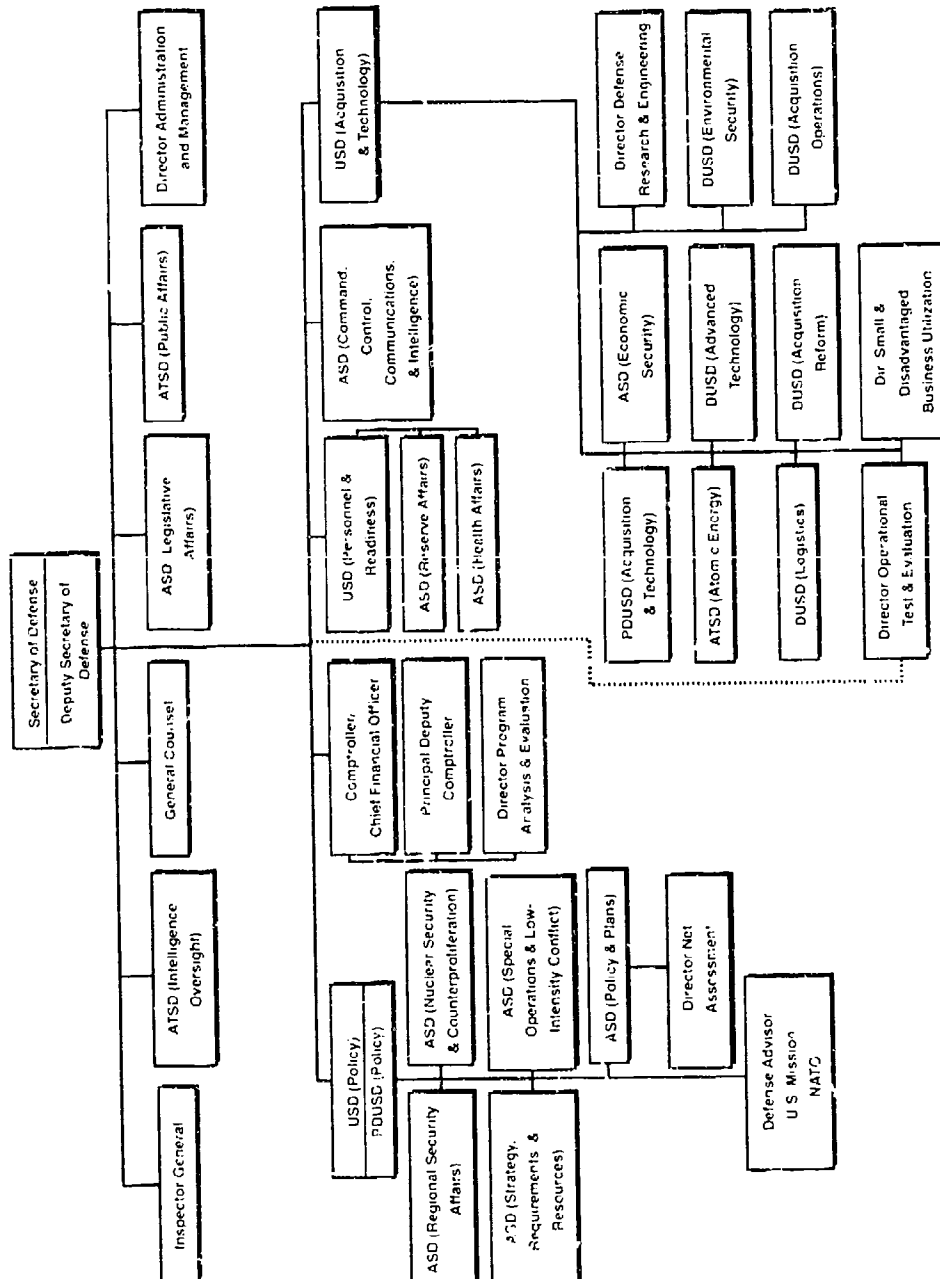
Chart A-1



Date: January 1994

Office of the Secretary of Defense

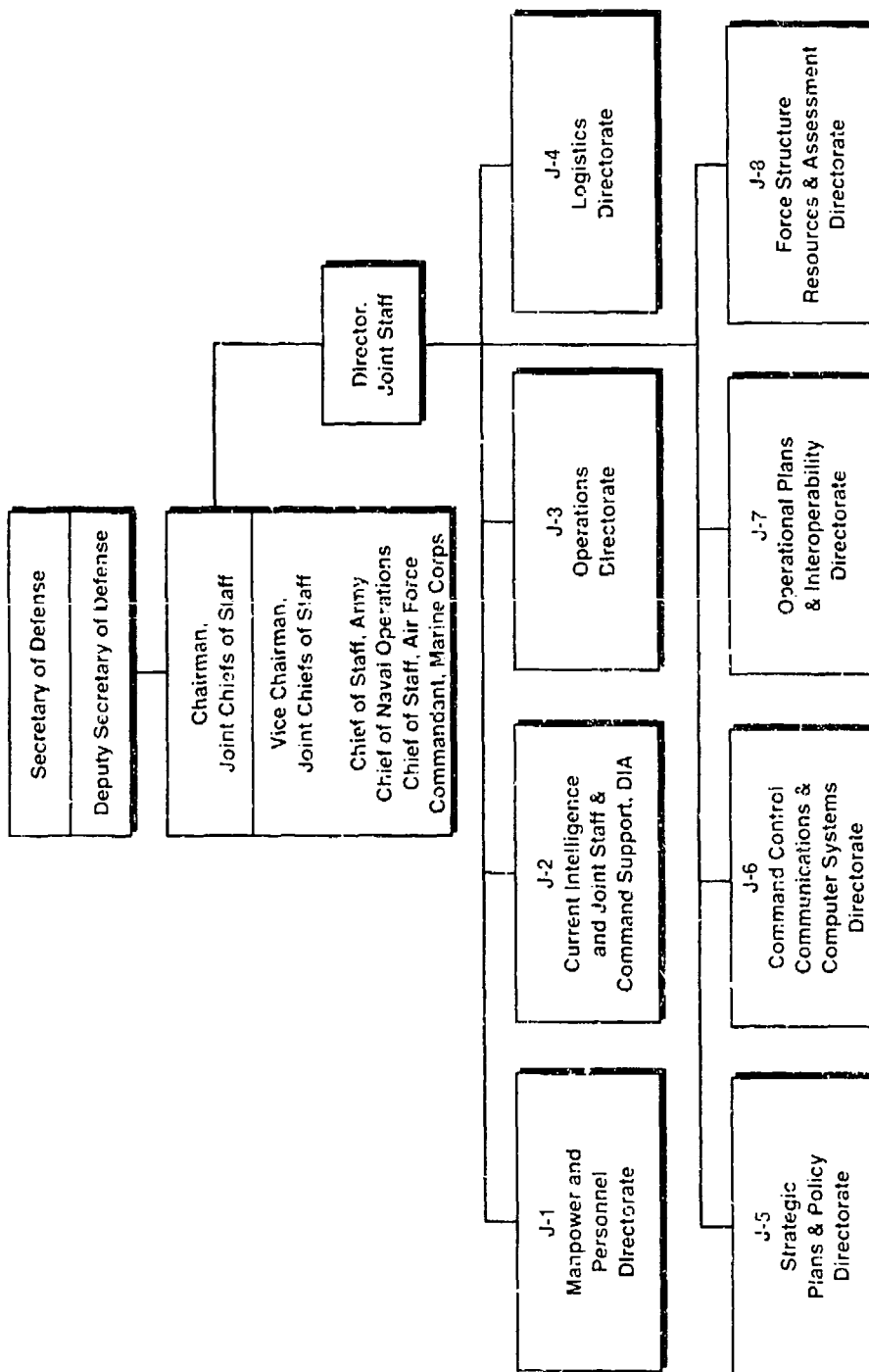
Chart A-2



Date: January 1994

Joint Chiefs of Staff

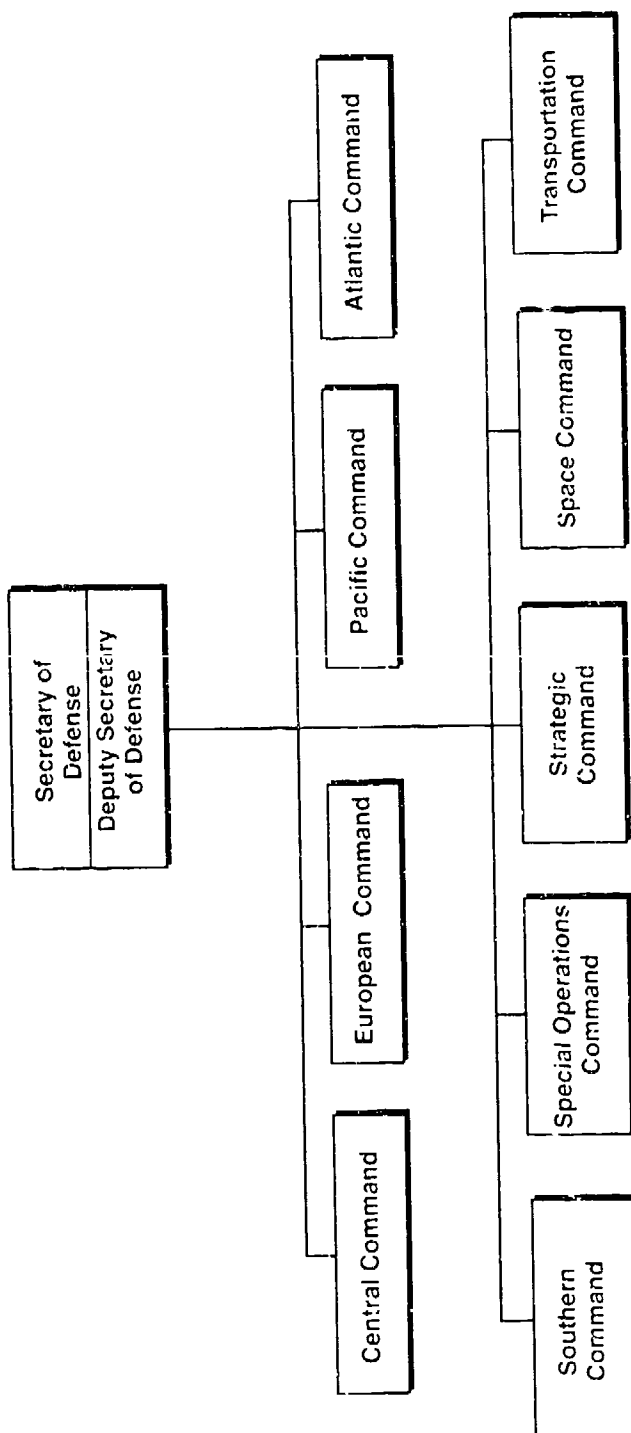
Chart A-3



Date: January 1994

Combatant Commands

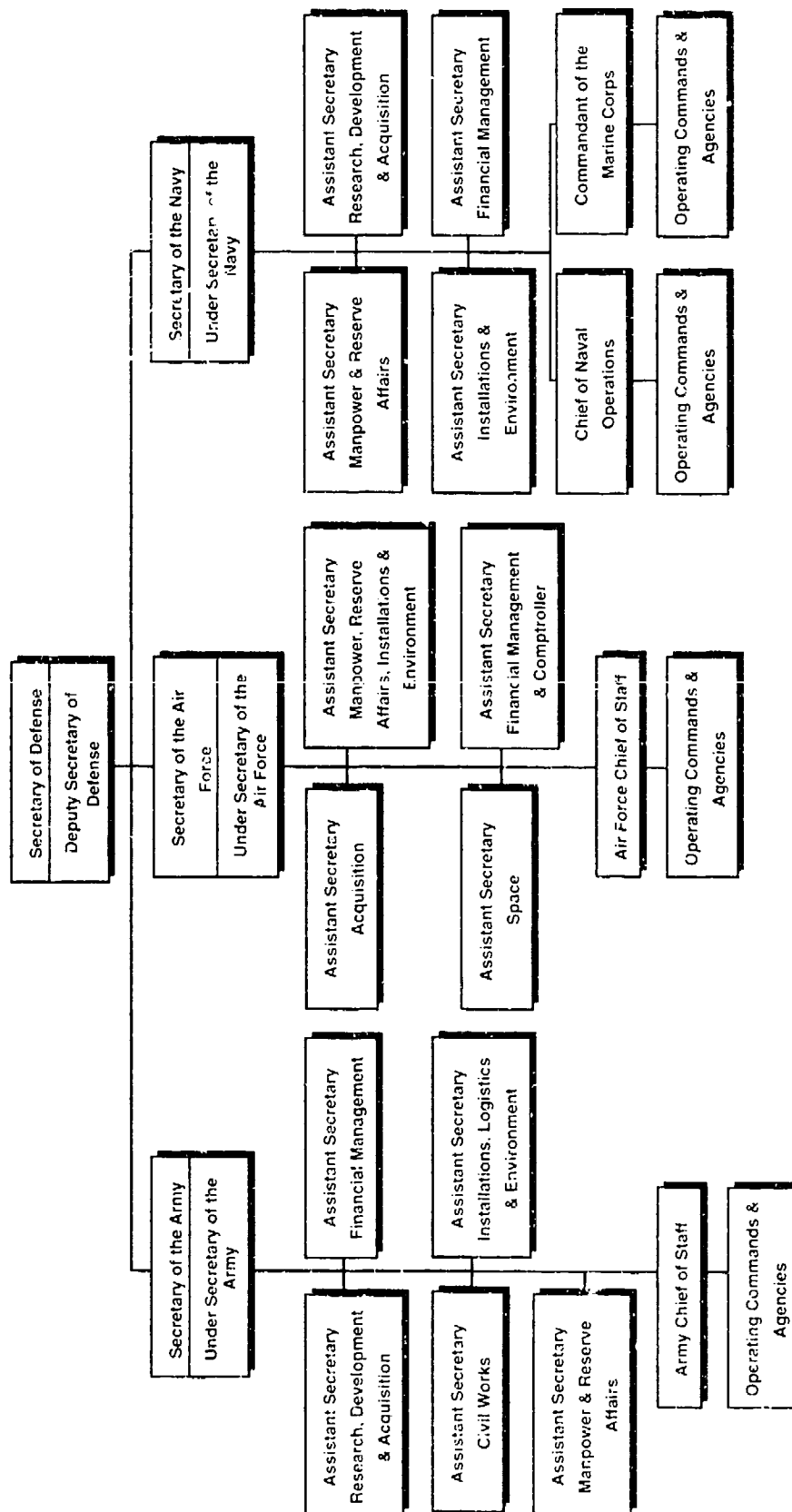
Chart 1-2



Date: January 1994

Military Departments

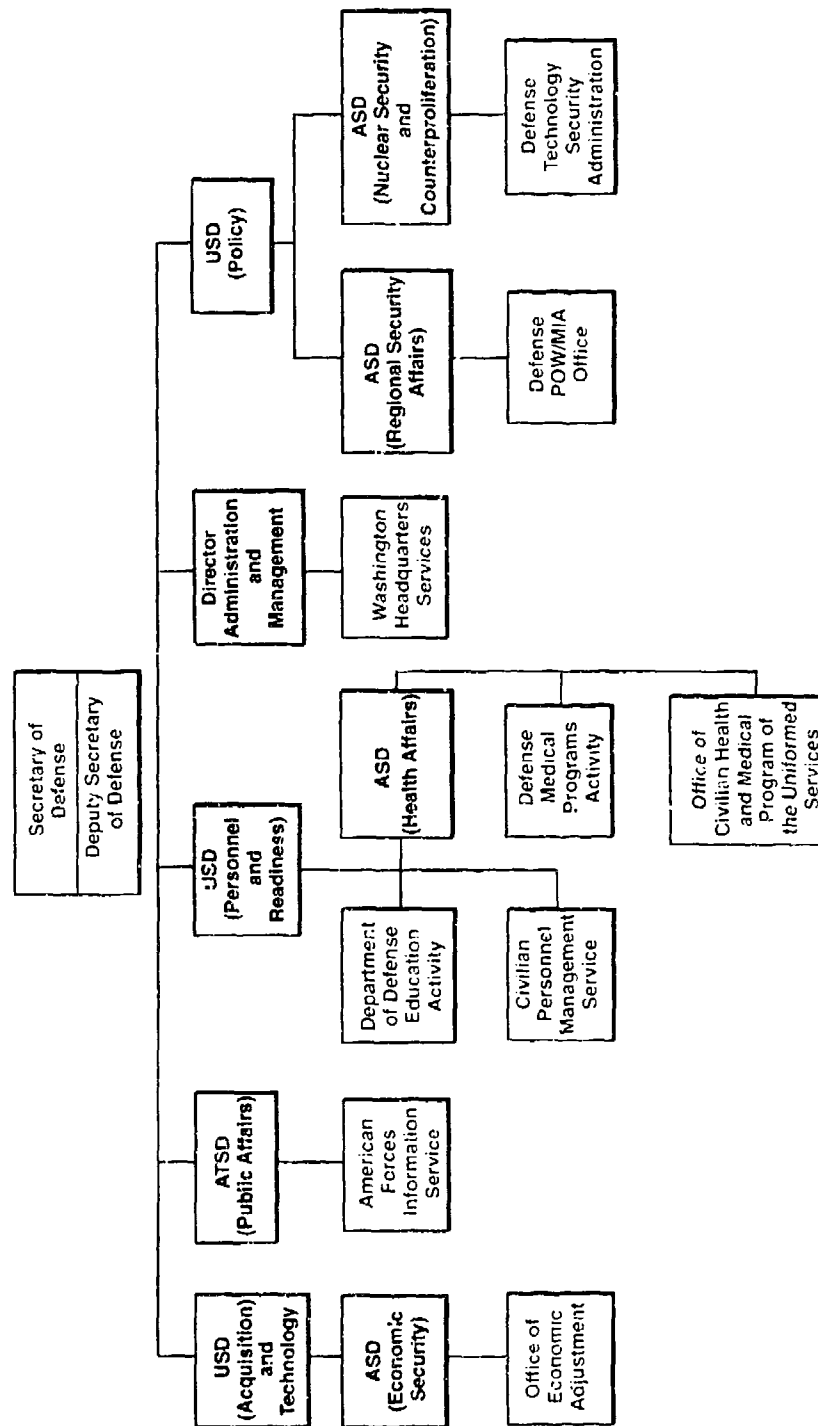
Chart A-5



Date: January 1994

DOD Field Activities

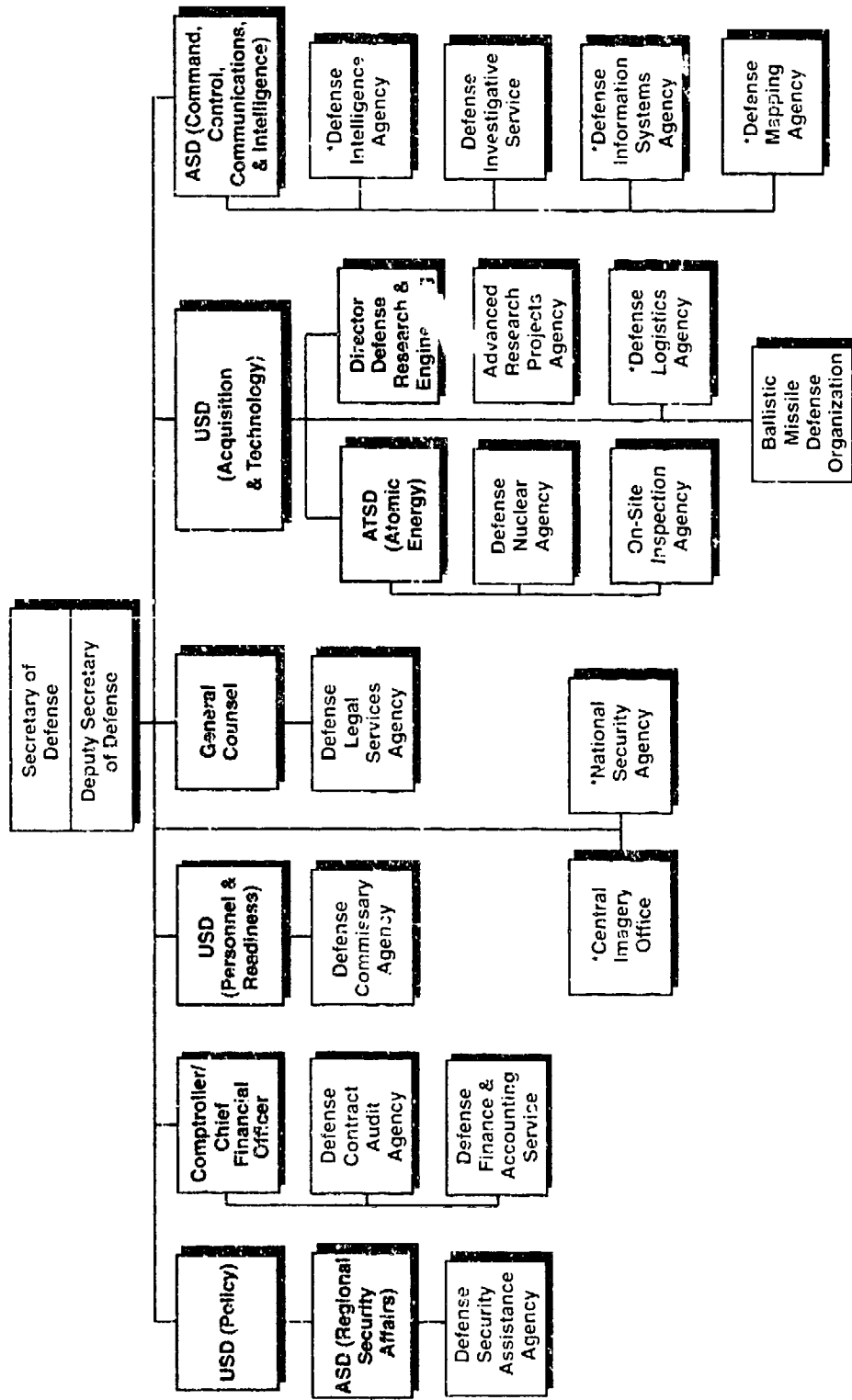
Chart A-6



Date: January 1994

Defense Agencies

Chart A-7



*Combat Support Agency

Date: January 1994

BUDGET TABLES

Department of Defense — Budget Authority by Appropriation^a (Dollars in Millions)

Table B-1

	FY 1988	FY 1989	FY 1990	FY 1991 ^b	FY 1992 ^b	FY 1993	FY 1994	FY 1995
Current Dollars								
Military Personnel	76,584	78,477	78,876	84,213	81,221	75,974	70,773	70,475
Operations and Maintenance (O&M)	81,629	86,221	88,309	117,234	93,791	89,172	87,972	92,884
Procurement	80,053	79,390	81,376	71,740	62,952	52,789	44,454	43,274
Research, Development, Test, and Evaluation (RDT&E)	36,521	37,530	36,459	36,193	36,623	37,974	34,782	36,225
Military Construction	5,349	5,738	5,130	5,188	5,254	4,554	5,963	5,049
Family Housing	3,199	3,276	3,143	3,296	3,738	3,941	3,501	3,307
Defense-wide Contingency Revolving & Management Funds	1,246	897	566	2,701	4,587	4,503	2,237	1,628
Trust & Receipts	-801	-668	-832	-44,329	-5,733	-435	-605	-585
Deduct, Intragovt Receipt	-26	-25	-27	-29	-550	-1,069	-110	-105
Total, Current \$	283,755	290,637	292,999	276,208	281,883	267,402	248,966	252,153
Constant FY 1995 Dollars								
Military Personnel	93,749	92,022	91,152	93,231	87,283	78,257	72,114	70,475
O&M	103,307	104,108	102,953	127,735	101,111	93,251	89,549	92,884
Procurement	98,791	94,453	93,671	80,187	68,113	55,888	45,761	43,274
RDT&E	45,700	45,077	42,107	40,323	39,692	40,048	35,734	36,225
Military Construction	6,656	6,858	5,909	5,795	5,706	4,811	6,133	5,049
Family Housing	4,003	3,939	3,641	3,655	4,049	4,157	3,596	3,307
Defense-wide Contingency Revolving & Management Funds	1,571	1,086	658	3,011	4,962	4,735	2,295	1,628
Trust & Receipts	-1,010	-808	-967	-49,409	-6,204	-458	-622	-585
Deduct, Intragovt Receipt	-33	-31	-31	-32	-595	-1,127	-113	-105
Total, Constant \$	351,733	346,705	339,091	304,495	304,536	279,563	254,445	252,153
% Real Growth								
Military Personnel	-0.4	-0.8	-1.0	2.3	-6.4	-10.4	-7.9	-2.3
O&M	-0.7	0.8	-1.1	24.1	-20.8	-7.8	-4.0	3.7
Procurement	-4.0	-4.4	-0.8	-14.4	-14.6	-18.4	-18.1	-5.4
RDT&E	-1.3	-1.4	-6.6	-4.2	-1.6	0.9	-10.8	1.4
Military Construction	0.8	3.0	-13.9	-1.9	-1.5	-15.7	27.5	-17.7
Family Housing	0.9	-1.6	-7.6	0.4	10.8	2.7	-13.5	-8.0
Total	-2.1	-1.4	-2.2	-10.2	0.0	-8.2	-9.0	-0.9

^a Numbers may not add to totals due to rounding.

^b In FY 1991-92, abrupt increases in budget authority, especially O&M, were due to the incremental costs of Operation Desert Shield/Storm. The FY 1991-92 sharp rise in receipts reflects offsetting allied contributions.

Department of Defense — Budget Authority by Component^a
(Dollars in Millions)

Table B-2

	FY 1988	FY 1989	FY 1990 ^b	FY 1991 ^b	FY 1992 ^{b,c}	FY 1993 ^c	FY 1994	FY 1995
Current Dollars								
Army	75,813	78,079	78,479	91,825	73,636	64,803	60,614	60,839
Navy	100,281	97,675	99,977	103,470	90,311	83,198	77,133	78,375
Air Force	88,324	94,685	92,890	91,257	82,340	79,146	73,704	74,492
Defense Agencies/ OSD/JCS	17,021	18,154	18,663	21,134	29,151	22,158	19,567	22,188
Defense-wide	2,315	2,245	2,989	-31,477	6,445	18,097	17,948	16,258
Total, Current \$	283,755	290,637	292,999	276,208	281,883	267,402	248,966	252,153
Constant FY 1995 Dollars								
Army	93,933	92,971	90,804	101,946	79,469	67,459	61,925	60,839
Navy	124,145	116,388	115,669	114,189	97,554	86,880	78,747	78,375
Air Force	109,303	112,774	107,561	99,842	88,939	82,845	75,268	74,492
Defense Agencies/ OSD/JCS	21,480	21,891	21,605	23,590	31,582	23,320	20,070	22,188
Defense-wide	2,873	2,681	3,451	-35,072	6,992	19,059	18,436	16,258
Total, Constant \$	351,733	346,705	339,091	304,495	304,536	279,563	254,445	252,153
% Real Growth								
Army	-1.6	-1.0	-2.3	12.3	-22.1	-15.1	-8.2	-1.8
Navy	3.5	-6.3	-0.6	-1.3	-14.6	-11.0	-9.4	-0.5
Air Force	-6.6	3.2	-4.6	-7.2	-10.9	-6.9	-9.2	-1.0
Defense Agencies/ OSD/JCS	14.8	1.9	-1.3	9.2	33.9	-26.2	-13.9	10.6
Defense-wide	91.4	-6.7	28.7	-1,116.4	-119.9	172.8	-3.3	-11.8
Total	-2.1	-1.4	-2.2	-10.2	0.0	-8.2	-9.0	-0.9

^a Numbers may not add to totals due to rounding. Entries for the three military departments include Retired Pay accrual.

^b FY 1990-93 data for the three departments and defense agencies includes Gulf War incremental costs. FY 1991-93 defense-wide entries include appropriations that made available allied cash contributions to offset these incremental costs.

^c In FY 1992, \$9.1 billion was shifted from the Military Services to defense agencies/OSD for the new Defense Health Program (DHP). In FY 1993, the DHP began being reflected in the defense-wide line.

Federal Budget Trends
(Dollars in Millions)

Table B-3

Fiscal Year	Federal Outlays as a % of GDP	DoD Outlays as a % of Federal Outlays	DoD Outlays as a % of GDP	Non-DoD Outlays as a % of Federal Outlays	Non-DoD Outlays as a % of GDP	DoD Outlays as a % of Net Public Spending ^a
1950	16.0	27.5	4.4	72.5	11.6	18.5
1955	17.8	51.5	9.2	48.5	8.6	35.6
1960	18.2	45.0	8.2	55.0	10.0	30.3
1965	17.6	38.8	6.8	61.2	10.8	25.2
1970	19.8	39.4	7.8	60.6	12.0	25.5
1971	20.0	35.4	7.1	64.6	12.9	22.4
1972	20.1	32.6	6.5	67.4	13.6	20.6
1973	19.3	29.8	5.7	70.2	13.5	19.0
1974	19.2	28.8	5.5	71.2	13.7	18.3
1975	22.0	25.5	5.6	74.5	16.4	16.5
1976	22.1	23.6	5.2	76.4	16.9	15.4
1977	21.3	23.4	5.0	76.6	16.4	15.5
1978	21.3	22.5	4.8	77.5	16.5	15.2
1979	20.7	22.8	4.7	77.2	16.0	15.4
1980	22.3	22.5	5.0	77.5	17.3	15.3
1981	22.9	23.0	5.3	77.0	17.6	15.8
1982	23.9	24.5	5.9	75.5	18.0	16.7
1983	24.4	25.4	6.2	74.6	18.2	17.3
1984	23.1	25.9	6.0	74.1	17.1	17.5
1985	23.9	25.9	6.2	74.1	17.7	17.6
1986	23.5	26.8	6.3	73.2	17.2	17.9
1987	22.6	27.3	6.2	72.7	16.4	17.6
1988	22.1	26.5	5.9	73.5	16.3	17.0
1989	22.1	25.8	5.7	74.2	16.4	16.5
1990	22.9	23.1	5.3	76.9	17.6	14.8
1991	24.0	19.8	4.7	80.2	18.8	12.6
1992	23.2	20.8	4.9	79.2	18.3	13.3
1993	22.4	17.9	4.4	82.1	18.0	12.2
1994	22.3	18.0	4.0	82.0	18.3	11.5

^aFederal, state, and local net spending excluding government enterprises (such as the postal service and public utilities) except for any support these activities receive from tax funds

Defense Shares of Economic Aggregates

Table B-4

Fiscal Year	DoD as a Percentage ^a of Public Employment		DoD as a Percentage ^a of National Labor Force		Gross Domestic Product (GDP) ^c Percentage of Total Purchases		
	Federal	Federal, State, and Local	Direct Hire (DoD)	Including Industry	National Defense ^b	Total Federal	State and Local
1965	69.8	28.2	4.8	7.6	7.4	10.0	9.4
1966	71.1	29.6	5.4	8.8	7.5	10.1	9.6
1967	71.9	30.5	5.8	9.8	8.7	11.1	10.0
1968	72.0	30.3	6.0	9.9	9.0	11.3	10.3
1969	72.0	29.5	5.7	9.3	8.5	10.8	10.5
1970	69.5	26.5	5.0	7.9	8.0	10.3	10.8
1971	67.1	23.7	4.6	6.9	7.2	9.5	11.3
1972	64.5	20.9	3.8	6.1	6.6	9.0	11.3
1973	63.6	19.8	3.6	5.6	6.0	8.4	11.1
1974	62.4	18.9	3.4	5.4	5.6	7.9	11.3
1975	61.6	18.1	3.3	5.2	5.7	8.2	12.0
1976	60.8	17.6	3.2	4.9	5.4	7.8	11.9
1977	60.2	17.0	3.1	4.9	5.2	7.6	11.2
1978	59.6	16.6	3.0	4.7	4.8	7.3	10.9
1979	59.6	16.1	2.9	4.7	4.8	7.1	10.8
1980	59.8	16.1	2.8	4.6	5.2	7.6	11.0
1981	60.8	16.6	2.8	4.7	5.4	7.8	10.6
1982	61.6	16.9	2.8	4.8	6.0	8.3	10.7
1983	61.9	17.2	2.6	5.0	6.3	8.7	10.7
1984	62.0	17.1	2.8	5.2	6.2	8.2	10.3
1985	61.2	17.0	2.8	5.4	6.3	8.4	10.5
1986	61.6	16.8	2.7	5.5	6.5	8.6	10.8
1987	61.3	16.6	2.7	5.8	6.5	8.6	11.0
1988	60.1	16.0	2.6	5.4	6.1	8.0	10.9
1989	60.4	15.8	2.6	5.2	5.8	7.7	10.9
1990	59.1	15.0	2.5	5.0	5.6	7.6	10.5
1991	58.4	14.7	2.4	4.9	5.8	7.9	11.4
1992	55.9	13.8	2.2	4.5	5.3	7.5	11.2
1993	56.3	13.5	2.1	4.2	5.0	7.3	11.3

^aDoD civilian employment data excludes foreign nationals.

^bIncludes Department of Defense — military, atomic energy defense activities, and other defense-related activities, such as emergency management and maintenance of strategic stockpiles and the Selective Service System.

^cData reflects the federal government's recent shift to GDP for measuring total purchases of goods and services.

PERSONNEL TABLES

Military and Civilian Personnel Strength^{a,b}
(End Fiscal Year — In Thousands)

Table C-1

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95 ^f
Active Component												
Army	780.2	780.8	781.0	780.8	771.8	769.7	750.6	725.4	611.3	572.4	540.0	510.0
Navy	564.5	570.7	581.1	586.8	592.6	592.7	582.9	571.3	541.9	510.0	471.5	441.6
Marine Corps	126.2	128.0	128.8	129.5	127.4	127.0	126.7	125.0	124.6	124.4	124.0	124.0
Air Force	597.1	601.5	603.2	607.0	576.4	570.9	539.3	510.9	470.3	444.4	425.7	400.1
Total	2138.2	2151.0	2169.1	2174.2	2138.2	2130.2	2059.4	2002.6	1808.1	1705.1	1611.2	1525.7
Reserve Component Military (Selected Reserve)												
ARNG	434.3	440.0	446.2	451.9	455.2	457.0	437.0	441.3	425.8	409.9	411.0	400.0
Army Reserve	275.1	292.1	309.7	313.6	312.8	319.2	299.1	299.9	302.7	275.9	260.0	242.0
Naval Reserve	120.6	129.8	141.5	148.1	149.5	151.5	149.4	150.5	142.3	132.4	113.4	100.7
MC Reserve	40.6	41.6	41.6	42.3	43.6	43.6	44.5	44.0	42.2	41.7	42.2	42.0
ANG	105.0	109.4	112.6	114.6	115.2	116.1	117.0	117.6	119.1	117.2	117.7	115.6
Air Force Reserve	70.3	75.2	78.5	80.4	82.1	83.2	80.6	84.3	81.9	80.6	81.5	78.7
Total	1045.8	1088.1	1130.1	1050.9	1158.4	1170.6	1127.6^c	1137.6^d	1114.0	1057.7	1024.8	979.0
Civilian^e												
Army	403.4	420.0	413.0	417.9	392.9	402.9	380.4	365.5	333.6	294.2	293.6	281.0
Navy	342.1	352.9	342.1	353.1	347.8	354.0	341.0	328.9	309.0	285.2	268.4	245.3
Air Force	252.7	263.9	263.2	264.3	253.2	260.6	248.9	232.7	214.4	201.7	201.5	195.4
Defense Agencies	87.3	92.4	94.0	97.8	95.3	99.3	102.5	117.4	149.0	155.8	159.6	151.7
Total	1085.5	1129.2	1112.3	1133.1	1090.2	1116.8	1072.8	1044.5	1006.1	936.9	923.1	873.4

^aAs of September 30, 1993

^bNumbers may not add to totals due to rounding

^cDoes not include 25,600 members of the Selected Reserve who were activated for Operation Desert Shield, displayed in the FY 1990 active strength total and paid for from the Active Military Personnel Appropriations account

^dDoes not include 17,059 members of the Selected Reserve who were activated for Operation Desert Shield Storm, displayed in the FY 1991 active strength total and paid for from the Active Military Personnel Appropriations account

^eIncludes direct and indirect hire civilians

^fPlanned

**U.S. Military Personnel in Foreign Areas
(End Fiscal Year — In Thousands)**

Table C-2

	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92 ^b	FY 93
Germany	256	254	254	247	250	251	249	249	228	203	134	105
Other Europe	67	70	73	75	75	73	74	71	64	62	54	44
Europe, Afloat	33	18	25	36	33	31	33	21	18	20	17	17
South Korea	39	39	41	42	43	45	46	44	41	40	36	35
Japan	51	49	46	47	48	50	50	50	47	45	46	46
Other Pacific	15	15	16	16	17	18	17	16	15	9	3	1
Pacific Afloat (Including Southeast Asia)	33	34	18	20	20	17	28	25	16	11	13	17
Latin America/ Caribbean	11	14	13	12	13	13	15	21	20	19	18	18
Miscellaneous	23	27	25	20	26	27	29	13	160	39 ^a	23	25
Total^c	528	520	511	515	525	524	541	510	609	448	344	308

^aIncludes 118,000 shore based and 39,000 afloat in support of Operation Desert Storm

^bAs of September 30, 1993

^cNumbers may not add to totals due to rounding

FORCE STRUCTURE TABLES

Strategic Defense Interceptors (PAA/Squadrons)^b Strategic Forces Highlights

Table D-1

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
Strategic Offense									
Land-Based ICBMs^a									
Titan	0	0	0	0	0	0	0	0	0
Minuteman	954	950	950	950	880	737	617	500	500
Peacekeeper	46	50	50	50	50	50	50	50	51
Strategic Bombers (PAA)^b									
B-52G/H	234	173	154	138	125	84	64	40	40
B-1B	90	90	90	90	84	84	84	60	60
B-2	0	0	0	0	0	0	4	7	11
Fleet Ballistic Missile Launchers (SLBMs)^a									
Poseidon (C-3 and C-4)	336	384	368	352	176	96	48	0	0
Trident (C-4 and D-5)	192	192	216	264	288	312	336	360	384
Strategic Defense Interceptors (PAA/Squadrons)^b									
Active Aircraft	36	36	18	18	0	0	0	0	0
Squadrons	2	2	1	1	0	0	0	0	0
Air National Guard	216	216	216	216	216	216	150	150	150
Squadrons	12	12	12	12	12	12	10	10	10

^aNumber on-line — Operational/not in maintenance or overhaul status

^bPAA — Primary aircraft authorized — Total inventory (including aircraft in depot maintenance, test aircraft, etc.) will be higher. Does not include conventionally armed heavy bombers.

**Department of Defense
General Purpose Forces Highlights**

Table D-2

	FY 88	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
Land Forces								
Army Divisions								
Active	18	18	16	14	14	12	12	11
Reserve	10	10	10	10	8	8	8	8
Marine Corps Divisions								
Active	3	3	3	3	3	3	3	3
Reserve	1	1	1	1	1	1	1	1
Army Separate Brigades^b								
Active	8	8	8	7	7	7	6	6
Reserve	20	20	19	18	15	10	6	TBD ^a
Army Special Forces Groups								
Active	4	5	5	5	5	5	5	5
Reserve	4	4	4	4	4	2	2	2
Army Ranger Regiment	1	1	1	1	1	1	1	1
Tactical Air Forces (PAA/Squadrons)^c								
Air Force Attack and Fighter Aircraft								
Active	1,868/79	1,722/76	1,560/71	1,254/57	1,131/56	963/50	936/51	936/51
Reserve	909/43	873/43	861/43	924/43	816/42	627/39	504/36	464/34
Conventional Bombers								
B-52G	0	33	33	33	33	0	0	0
Navy Attack and Fighter Aircraft								
Active	706/67	622/57	654/55	676/61	610/56	590/50	528/44	458/39
Reserve	110/10	97/9	116/10	116/10	116/10	114/9	38/3	38/3
Marine Corps Attack and Fighter Aircraft								
Active	354/25	363/24	368/26	346/24	330/23	332/23	332/23	332/23
Reserve	96/6	84/6	84/6	72/6	72/6	72/6	72/6	72/6
Naval Forces								
Strategic Forces Ships	43	39	40	34	24	16	16	17
Battle Forces Ships ^d	438	410	393	357	342	312	303	297
Support Forces Ships	60	56	62	57	51	41	37	27
Reserve Forces Ships	25	31	32	19	18	16	17	18
Total Ship Battle Forces	566	546	527	467	435	387	373	359
Mobilization Category B:								
Surface Combatants/								
Mine Warfare Ships	21	17	16	16	15	0	1	5
Local Defense Mine Warfare Ships and Coastal Defense Craft								
	0	0	0	0	2	9	18	19
Total Other Forces^e	21	19	16	16	17	9	19	24

^aTo be determined

^bIndicates official inactivations, activations, and conversions as of January 1, 1994. Does not include reactivated brigades; does include the Eskimo Scout Group and the armored cavalry regiments

^cPrimary aircraft authorized

^dTraining carrier included in Battle Forces Ships

^eExcludes auxiliaries and sealift forces

**Department of Defense
Airlift and Sealift Force Highlights**

Table D-3

	FY 88	FY 90	FY 92	FY 93	FY 94	FY 95	FY 96
Intertheater Airlift (PAA)^a							
C-5	98	109	109	109	109	104	104
C-141	234	234	234	214	214	199	187
KC-10	57	57	57	57	57	54	54
C-17	0	0	0	3	9	14	19
Intratheater Airlift (PAA)^a							
C-130	521	460	433	406	382	388	388
Sealift Ships, Active^b							
Tankers	20	28	20	20	18	18	18
Cargo	41	40	40	40	52	52	52
Sealift Ships, Reserve							
RRF ^c	91	96	97	97	99	99	106
NDRF ^d	129	121	122	59	59	48	38

^aPAA — Primary aircraft authorized — includes active and reserve component

^bActive — Includes fast sealift ships, afloat prepositioning ships, and common user (charter) ships

^cRRF — Ready Reserve Force (assigned to 4-, 5-, 10-, or 20-day reactivation readiness groups)

^dNDRF — National Defense Reserve Fleet

GOLDWATER-NICHOLS ACT IMPLEMENTATION REPORT

This appendix contains the Department's Joint Officer Management Annual Report for FY 1993. Acronyms used in report: JSO — Joint Specialty Officer; JDA — Joint Duty Assignment; COS — Critical Occupational Specialty; and JPME — Joint Professional Military Education. (Except for Tables E-2, E-5, reasons in E-9, E-11, and promotion objectives, the Joint Duty Assignment Management Information System (JDAMIS) was used to produce this report.)

SUMMARY OF JOINT SPECIALTY OFFICER AND JOINT SPECIALTY OFFICER NOMINEE DESIGNATIONS FOR FY 1993

Table E-1

Category	USA	USN	USAF	USMC	TOTAL
Number of officers designated as JSOs*	234	33*	0	0	267
Number of officers designated as JSO nominees	388	207	703	0	1,298
Number of JSO nominees designated under COS provisions	309	138	387	0	834

*NOTE: 108 Navy Officers designated as JSOs on October 21, 1993 — will be reported in FY 1994

CRITICAL OCCUPATIONAL SPECIALTIES

Table E-2

USA	USN	USAF	USMC
Infantry	Surface	Pilot	Infantry
Armor	Submariner	Navigator	Tanks/AAV
Artillery	Aviation	*Air Weapons Director	*Artillery
Air Defense Artillery	SEALS	Missile Operations	*Air Control/Air Support/Airfair
Aviation	Special Operations	Space Operations	Aviation
Special Operations		Operations Mgmt	Engineers
Combat Engineers			

*Specialties which have a severe shortage of officers

SUMMARY OF OFFICERS ON ACTIVE DUTY WITH A CRITICAL OCCUPATIONAL SPECIALTY (AS OF SEPTEMBER 30, 1993)

Table E-3

CATEGORY	USA	USN	USAF	USMC	TOTAL
COS officers who have completed JPME	1,542	1,196	1,626	490	4,854
COS officers designated as JSOs	1,537	1,220	1,269	574	4,600
COS officers designated as JSO nominees	1,481	1,337	2,122	344	5,284
COS officers designated as JSO nominees who have not completed JPME	1,071	1,042	1,427	199	3,739
COS JSO nominees currently serving in a JDA	686	645	925	135	2,391
COS JSO nominees who completed a JDA and are currently attending JPME	3	1	10	1	15

SUMMARY OF JSOs WITH CRITICAL OCCUPATIONAL SPECIALTIES WHO ARE SERVING OR HAVE SERVED IN A SECOND JOINT ASSIGNMENT (AS OF SEPTEMBER 30, 1993)

Table E-4

	USA		USN		USAF		USMC		TOTAL	
Field Grade										
Have served*	77	(12)	25	(10)	126	(45)	6	(4)	234	(71)
Are serving*	133	(35)	52	(22)	125	(45)	15	(4)	325	(106)
General/Flag										
Have served*	6	(6)	5	(1)	12	(6)	0	(0)	23	(13)
Are serving*	13	(10)	6	(4)	11	(6)	4	(3)	34	(23)

*Number in parenthesis indicates number of second joint assignments which were to a critical joint position

**ANALYSIS OF THE ASSIGNMENT
OFFICERS WERE REASSIGNED (IN FY 1993) ON THEIR FIRST
ASSIGNMENT FOLLOWING DESIGNATION AS A JOINT SPECIALTY OFFICER**

Table E-5

ASSIGNMENT CATEGORY	USA	USN	USAF	USMC	TOTAL
Command	6	11	10	0	27
Service HQ	8	4	2	0	14
Joint Staff critical	2	0	1	0	3
Joint Staff other	1	0	0	0	1
Other JDA critical	12	3	8	0	23
Other JDA	4	1	1	0	6
PME	2	0	5	0	7
Other Operations	0	4	4	0*	8
Other Staff	196	7	3	0*	206
Other Shore	—	12	—	—	12

*For the Marine Corps: Other Operations = Fleet Marine Force; Other Staff = Non-Fleet Marine Corps

**AVERAGE LENGTH OF TOURS OF DUTY
IN JOINT DUTY ASSIGNMENTS (FY 1993)
(IN MONTHS)**

Table E-6

GENERAL/FLAG OFFICERS			
	JOINT STAFF	OTHER JOINT	JOINT TOTAL
USA	26.7	27.6	27.3
USN	20.3	27.1	26.0
USAF	24.1	29.6	28.5
USMC	24.9	20.2	22.2
DoD	24.5	27.7	26.9
FIELD GRADE OFFICERS			
	JOINT STAFF	OTHER JOINT	TOTAL
USA	36.3	38.4	38.1
USN	34.6	38.9	38.3
USAF	37.1	40.0	39.7
USMC	37.8	38.7	38.6
DoD	36.3	39.2	38.9

SUMMARY OF TOUR LENGTH EXCLUSIONS FOR FY 1993					Table E-7
CATEGORY	USA	USN	USAF	USMC	TOTAL
Retirement	216	82	184	18	500
Separation	0	17	24	0	41
Suspension From Duty	2	1	4	0	7
Compassionate/Medical	6	6	6	0	18
Other Joint After Promotion	4	2	1	1	8
Reorganization	7	3	8	1	19
Joint Overseas-Short Tours	157	43	128	13	341
Joint Accumulation	3	5	3	0	11
COS Reassignment	80	123	89	22	314
TOTAL	475	282	447	55	1,259

JOINT DUTY POSITION DISTRIBUTION BY SERVICE (AS OF SEPTEMBER 30, 1993)					Table E-8
	JOINT STAFF	OTHER JOINT DUTY	TOTAL JOINT DUTY	Total DoD JDAs%	Total DoD Officers %*
USA	274	2,866	3,140	34.5%	30.3%
USN	221	1,723	1,944	21.4%	26.0%
USMC	64	461	525	5.8%	5.9%
USAF	282	3,204	3,486	38.3%	37.8%
DoD	841	8,254	9,095	100%	100%

*Total officers: 0-3 through 0-10

CRITICAL POSITIONS SUMMARY (AS OF SEPTEMBER 30, 1993)

Table E-9

Category	USA	USN	USAF	USMC	Total
Total Critical Positions	387	188	364	61	1,000
Number of Vacant Positions	63	19	85	7	174
Number of Critical Positions Filled by JSOs and % of Filled Positions	277(87%)	138(82%)	239(86%)	38(75%)	692(84%)
Number of Critical Positions Not Filled by JSOs	43	30	38	16	127
Percent Critical Positions Filled by JSOs (Since January 1, 1989)	85%	82%	86%	70%	84%

Reasons for filling critical positions with officers who are not JSOs are listed below:

Position filled by incumbent prior to being a joint position:	1
Position being converted to a noncritical position or being deleted:	5
Joint specialist officer not yet available:	7
Best qualified officer not joint specialist:	68
Position filled by incumbent prior to being a critical position:	22
Officer reassigned internally by organization:	3
Other:	21
TOTAL	127

THE FOLLOWING ORGANIZATIONS HAVE JOINT DUTY CRITICAL POSITIONS WHICH ARE FILLED BY OFFICERS WHO DO NOT POSSESS THE JOINT SPECIALTY:

US Atlantic Command (USLANTCOM)	5
US Central Command (USCENTCOM)	9
Office of the Secretary of Defense (OSD)	3
US European Command (USEUCOM)	5
US Command/Combined Forces Command	3
US National Military Representative	1
National Defense University (NDU)	4
US Space Command (USSPACECOM)	3
Defense Nuclear Agency (DNA)	4
Defense Mapping Agency (DMA)	1
Defense Logistics Agency (DLA)	3
Defense Information Systems Agency (DISA)	5
Defense Intelligence Agency (DIA)	5
Defense Attache'	3
Office of Emergency Operations (OEO)	3
On-Site Inspection Agency (OSIA)	1
Joint Staff	7
US Military Entrance Processing Command (USMEPCOM)	1
US Strategic Command (USSTRATCOM)	11
US Pacific Command (USPACOM)	9
US Special Operations Command (USSOCOM)	5
US Southern Command (USSOUTHCOM)	9
US Transportation Command (USTRANSCOM)	1
US Delegation to the NATO Military Committee	1
Allied Command Europe (ACE)	11
Allied Command Atlantic (ACLANT)	2
Non-Joint Staff (G/FO)	12
TOTAL	127

COMPARISON OF WAIVER USAGE (FY 1993)

Table E-10

CATEGORY	USA	USN	USAF	USMC	Total
JSO Designations	234	33	0	0	267
JSO Sequence Waivers	10	0	0	0	10
JSO Two-tour Waivers	3	0	0	0	3
JSOs Graduating from JPME	1	7	12	2	22
JDA Assignment Waivers Granted	0	1	1	0	2
Field Grade Officers who departed JDAs	976	602	1,092	167	2,637
Field Grade JDA tour length waivers	48	21	27	1	97
General/Flag Officer Section					
General/Flag Officers who departed JDAs	36	27	39	7	109
General/Flag Officer JDA tour length waivers	13	6	11	4	34
Attended CAPSTONE	36	35	38	10	119
CAPSTONE Waivers	0	5	0	0	5
Selected for Promotion to O-7	42	35	43	14	134
Good of the Service Waivers	6	4	3	2	15
Other Waivers	28	28	28	4	88

JOINT PROFESSIONAL MILITARY EDUCATION (PME) PHASE II SUMMARY (FY 1993)

Table E-11

Category	USA	USN	USAF	USMC	Total
Students graduating from Armed Forces Staff College in FY 1993	292	169	333	47	841
Students who had not completed resident PME (percent of total)	0 (0)	10 (5.9)	54 (16.2)	15 (32)	79 (9)*
Students who had completed non-resident PME (percent of total)	0 (0)	9 (5.4)	54 (16.2)	14 (29.8)	77 (9.2)
Students who had not completed resident or non-resident PME(percent of total)	0 (0)	1 (0.6)	0 (0)	1 (2.1)	2 (0.1)
*REASONS FOR STUDENTS NOT COMPLETING RESIDENT PROFESSIONAL MILITARY EDUCATION (PME) PRIOR TO ATTENDING PHASE II					
Officer completed Phase I by correspondence/seminar				60	
Officer completed Phase I equivalent program				17	
Officer scheduled to attend a resident PME immediately following Phase II				0	
Officer career path did not allow attendance at a resident PME program				2	
Other				0	

DESERT SHIELD/DESERT STORM JOINT DUTY CREDIT

Table E-12

CATEGORY	USA	USN	USAF	USMC	TOTAL
Total granted credit	159	96	124	34	413
Granted full tour credit	104	46	87	19	256
Granted partial tour credit	55	50	37	15	157
Grade and Specialty*					
General/Flag Officers					
010	1			1	2
09	1	1	1	2	5
08	2	1	3	2	8
07	3		1	1	5
Executives					
06				3	3
Tactical Operations					
06	15	31	9		55
05	35	21	36	9	101
04	39	18	38	11	106
03	8	5	16		29
Intelligence					
06	4	2	1		7
05	4	5	1		10
04	6	6	3	3	18
03					
Engineering and Maintenance					
06					
05	2	1	1		4
04	7	1	2	1	11
03					
Scientists & Professionals					
06					
05					
04			1		1
03					
Administrators					
06	1	1	1		3
05	11	1	1		13
04	6	1	4		11
03		1			1
Supply, Procurement & Allied					
06	3		1		4
05	2		3	1	6
04	8		1		9
03	1				1

*Grade as of September 30, 1993

The DoD Reorganization Act of 1986 requires the Department to report the promotion rates for field grade (0-4 to 0-6) and general/flag officers (0-7 and 0-8) with the intent of measuring the quality of officers assigned to joint duty assignments. See Notes at the end of this table for consolidation of brief explanations where the required promotion objectives were not met for the in zone categories. In this table, an N/A indicates there were no eligible officers in that category or that no such category exists.

FISCAL YEAR 1993 JOINT OFFICER PROMOTION RATES											Table E-13
GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SEL	%	
AIR FORCE PROMOTION RATES (LINE)											
0-8	Joint Staff	33	N/A	N/A	0	N/A	N/A	4	1	25	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	65	18	28	
	Service HQS	32	N/A	N/A	20	N/A	N/A	29	8	28	
	Other Joint	50	N/A	N/A	0	N/A	N/A	3	1	33	
	Board Average	20	N/A	N/A	25	N/A	N/A	85	22	26	
0-7	Joint Staff	13	N/A	N/A	0	N/A	N/A	22	2	9.1	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	833	27	3.2	
	Service HQS	7	N/A	N/A	6	N/A	N/A	136	9	6.6	
	Other Joint	1	N/A	N/A	0	N/A	N/A	122	1	0.8	
	Board Average	2.2	N/A	N/A	2.2	N/A	N/A	1,757	39	2.2	
0-6	Joint Staff	50	20	0	50	6.3	14.3	30	15	50	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	161	101	62.7	
	Service HQS	51.8	4.7	9.1	79	8	11.8	137	93	67.9	
	Other Joint	69.6	2.8	0	37.7	2.7	0	140	78	55.7	
	Board Average	41.6	2.5	4.5	41.6	2.5	4.5	1,102	458	41.6	
0-5	Joint Staff	85%	6.7	0	100	0	0	27	24	88.9	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	101	72	71.3	
	Service HQS	86	6.6	12.5	91.8	7.5	9.5	135	119	88.1	
	Other Joint	72.2	3.4	3	65.8	2	0	274	193	70.4	
	Board Average	63.4	1.7	1.5	63.4	1.7	1.5	1,887	1,196	63.4	
0-4	Joint Staff	N/A	33.3	N/A	N/A	0	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	
	Service HQS	95.3	10.5	N/A	92.9	14.3	N/A	57	54	94.7	Note 4
	Other Joint	87.5	2	100	67.9	5	0	60	47	78.3	
	Board Average	75.2	1.8	7.0	75.2	1.8	7.6	2,915	2,191	75.2	
ARMY PROMOTION RATES (ARMY COMPETITIVE CATEGORY)											
0-8	Joint Staff	50	N/A	N/A	100	N/A	N/A	3	2	66.7	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	56	17	30.4	
	Service HQS	23.5	N/A	N/A	50	N/A	N/A	3	1	33.3	
	Other Joint	42.9	N/A	N/A	40	N/A	N/A	12	5	41.7	
	Board Average	29.5	N/A	N/A	29.5	N/A	N/A	95	28	29.5	
0-7	Joint Staff	3.9	N/A	N/A	24	N/A	N/A	75	2	2.7	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1,115	23	2.1	
	Service HQS	4.8	N/A	N/A	69	N/A	N/A	215	7	3.3	Note 1
	Other Joint	2.3	N/A	N/A	19	N/A	N/A	147	3	2	
	Board Average	2.2	N/A	N/A	2.2	N/A	N/A	1,734	38	2.2	
0-6	Joint Staff	30.3	0	0	36.8	9.4	0	32	11	34.4	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	335	154	46	
	Service HQS	40	0	0	53.2	3.1	2.6	109	80	47.3	
	Other Joint	14.5	0	1.7	37.7	0.7	0	123	32	26	
	Board Average	44.4	2.2	1	44.4	2.2	1	964	425	44.4	

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	S	%	
O-5	Joint Staff	100	11.1	33.3	100	20	N/A	11		100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	55		92.7	
	Service HQS	86.9	5.2	6	90.6	9.6	0	127	112	88.1	
	Other Joint	75.5	1.7	4.8	65.8	6.3	3.3	367	262	71.3	
	Board Average	63.1	5.2	1.6	63.1	5.2	1.6	1,927	1,216	63.1	
O-4	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	95	12.5	N/A	100	0	N/A	22	21	95.5	
	Other Joint	62.5	0	0	66.7	0	N/A	14	9	64.3	Note 1
	Board Average	71.1	5.8	7.7	71.1	5.8	7.7	2,007	1,427	71.1	
MARINE CORPS PROMOTION RATES (UNRESTRICTED)											
O-8	Joint Staff	0	N/A	N/A	100	N/A	N/A	2	1	50	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	18	10	55.5	Note 1
	Service HQS	67	N/A	N/A	50	N/A	N/A	12	7	58	
	Other Joint	N/A	N/A	N/A	100	N/A	N/A	1	1	100	
	Board Average	55	N/A	N/A	55	N/A	N/A	20	11	55	
O-7	Joint Staff	0	N/A	N/A	25	N/A	N/A	15	2	15	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	218	12	6	
	Service HQS	8	N/A	N/A	4	N/A	N/A	95	5	5	
	Other Joint	0	N/A	N/A	6	N/A	N/A	25	1	4	
	Board Average	4	N/A	N/A	4	N/A	N/A	410	15	4	
O-6	Joint Staff	80	0	0	0	0	0	8	4	50	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	55	24	44	
	Service HQS	47	0	0	54	0	5	50	26	52	
	Other Joint	47	0	0	64	0	5	33	18	55	
	Board Average	42	1	2	42	1	2	218	91	42	
O-5	Joint Staff	50	0	0	100	N/A	0	5	3	60	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	20	12	60	Note 2
	Service HQS	78	10	0	70	2	5	45	33	73	
	Other Joint	50	0	0	57	0	0	50	29	58	
	Board Average	54	1	3	54	1	3	332	180	54	
O-4	Joint Staff	N/A	0	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	83	0	13	72	0	0	36	28	78	
	Other Joint	0	0	0	N/A	N/A	0	1	0	0	Note 1
	Board Average	67	0	8	67	0	8	423	283	67	
NAVY PROMOTION RATES											
Unrestricted Line	Joint Staff	100	N/A	N/A	67	N/A	N/A	4	3	75	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	36	18	50	
	Service HQS	67	N/A	N/A	30	N/A	N/A	13	10	77	
	Other Joint	0	N/A	N/A	0	N/A	N/A	3	0	0	Note 2
	Board Average	45	1	2	45	1	2	44	20	45	
Aerospace Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0	Note 3
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	N/A	N/A	N/A	N/A	N/A	N/A	2	1	50	

Appendix E
GOLDWATER-NICHOLS ACT IMPLEMENTATION REPORT

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SEL	%	
0-8 Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0	Note 3
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	N/A	N/A	N/A	N/A	N/A	N/A	3	1	33	
0-8 Restricted Line Intelligence	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	N/A	N/A	N/A	N/A	N/A	N/A	1	1	100	
0-8 Staff Supply	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	3	1	33	Note 1
	Service HQS	0	N/A	N/A	100	N/A	N/A	2	1	50	
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	33	N/A	N/A	33	N/A	N/A	5	1	33	
0-7 Unrestricted Line	Joint Staff	17.6	N/A	N/A	0	N/A	N/A	30	3	10	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	465	9	1.9	
	Service HQS	3.7	N/A	N/A	1.2	N/A	N/A	191	5	2.6	
	Other Joint	3.6	N/A	N/A	3.8	N/A	N/A	82	3	3.7	
	Board Average	2.3	N/A	N/A	2.3	N/A	N/A	1,106	26	2.3	
0-7 Staff Supply	Joint Staff	0	N/A	N/A	0	N/A	N/A	2	0	0	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	49	0	0	
	Service HQS	0	N/A	N/A	0	N/A	N/A	11	0	0	
	Other Joint	12.5	N/A	N/A	0	N/A	N/A	11	1	9.1	
	Board Average	N/A	N/A	N/A	N/A	N/A	N/A	109	2	1.8	
0-7 Staff Civil Engineer	Joint Staff	N/A	N/A	N/A	0	N/A	N/A	1	0	0	Note 3
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	12	1	6.3	
	Service HQS	0	N/A	N/A	0	N/A	N/A	7	0	0	
	Other Joint	0	N/A	N/A	0	N/A	N/A	2	0	0	Note 1
	Board Average	1.0	N/A	N/A	1.6	N/A	N/A	64	1	1.6	
0-7 Restricted Aerospace Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	11	1	9.1	
	Service HQS	0	N/A	N/A	0	N/A	N/A	5	0	0	
	Other Joint	0	N/A	N/A	N/A	N/A	N/A	3	0	0	Note 1
	Board Average	1.6	N/A	N/A	1.6	N/A	N/A	64	1	1.6	
0-7 Restricted Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	7	0	0	
	Service HQS	N/A	N/A	N/A	0	N/A	N/A	4	0	0	
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	N/A	N/A	N/A	N/A	N/A	N/A	88	2	2.3	
0-7 Restricted Line Intelligence	Joint Staff	N/A	N/A	N/A	0	N/A	N/A	1	0	0	Note 3
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	49	1	2	
	Service HQS	0	N/A	N/A	N/A	N/A	N/A	3	0	0	
	Other Joint	0	N/A	N/A	0	N/A	N/A	3	0	0	Note 2
	Board Average	1.7	N/A	N/A	1.7	N/A	N/A	58	1	1.7	
0-6 Unrestricted Line	Joint Staff	85	5	0	40	3	50	43	23	53	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	91	54	57	
	Service HQS	57	0	5	44	1	0	78	37	47	
	Other Joint	1.8	0	0	24	5	0	61	21	31	
	Board Average	49	2	2	49	2	2	459	226	49	

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SEL	%	
O-6 Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	2	1	50	Note 2
	Service HQS	100	0	0	100	0	N/A	2	2	100	
	Other Joint	N/A	0	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	47	0	12	47	0	12	38	13	47	
O-6 Engineering Aerospace	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	3	1	33	Note 2
	Service HQS	0	0	N/A	100	N/A	N/A	4	3	75	
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	46	0	0	46	0	0	24	11	46	
O-6 Engineering Aerospace Maintenance	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	0	0	N/A	N/A	0	0	1	0	0	Note 3
	Other Joint	N/A	100	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	36	5	0	36	5	0	11	4	36	
O-6 Cryptology	Joint Staff	100	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	3	1	33	
	Service HQS	N/A	N/A	0	0	0	0	2	0	0	
	Other Joint	N/A	0	0	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	40	0	6	40	0	6	10	4	40	
O-6 Intelligence	Joint Staff	100	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	14	8	57	Note 1
	Service HQS	100	0	N/A	33	0	N/A	5	3	60	
	Other Joint	20	0	0	33	0	N/A	8	2	25	Note 2
	Board Average	50	0	0	50	0	0	36	15	50	
O-6 Public Affairs	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 1
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	3	0	0	
	Service HQS	N/A	0	N/A	N/A	0	N/A	0	0	0	Note 4
	Other Joint	N/A	0	N/A	100	0	100	1	1	100	
	Board Average	25	0	17	25	0	17	4	1	25	
O-6 Oceanography	Joint Staff	N/A	N/A	N/A	100	N/A	N/A	1	1	100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	6	2	33	Note 2
	Service HQS	100	0	100	50	0	0	5	3	60	
	Other Joint	N/A	N/A	N/A	N/A	N/A	0	0	0	0	Note 4
	Board Average	33	0	11	33	0	11	12	4	33	
O-6 Limited Duty	Joint Staff	N/A	N/A	N/A	100	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	50	0	N/A	0	0	0	3	1	33	
	Other Joint	0	0	0	0	N/A	N/A	4	0	50	
	Board Average	30	0	0	30	0	0	47	14	30	
O-6 Civil Engineer	Joint Staff	N/A	0	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	4	2	50	Note 1
	Service HQS	N/A	0	N/A	100	0	0	1	1	100	
	Other Joint	0	0	N/A	0	0	N/A	2	0	0	Note 2
	Board Average	45	0	0	45	0	0	31	14	45	
O-6 Supply	Joint Staff	100	0	N/A	N/A	0	N/A	2	1	50	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	7	3	43	
	Service HQS	0	0	N/A	N/A	20	N/A	1	0	0	Note 3
	Other Joint	33	0	0	20	0	N/A	0	0	25	Note 2
	Board Average	40	2	2	40	2	2	62	25	40	

Appendix I
GOLDWATER-NICHOLS ACT IMPLEMENTATION REPORT

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SEL	%	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Limited	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Duty	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Staff	Other Joint	N/A	N/A	N/A	0	N/A	N/A	1	0	0	Note 3
	Board Average	33	0	N/A	33	0	N/A	3	1	33	
0-5	Joint Staff	83	0	0	83	0	0	12	10	83	
Unrestricted	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	24	18	75	Note 1
Line	Service HQS	82	0	0	79	0	0	41	33	80	
	Other Joint	74	0	4	69	2	0	71	51	72	
	Board Average	63	0	1	63	0	1	548	346	63	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Engineering	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Duty	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	0	0	0	0	0	0	2	0	0	Note 2
	Board Average	55	1	4	55	1	4	38	21	55	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Engineering	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Aerospace	Service HQS	N/A	N/A	N/A	N/A	0	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	0	N/A	0	0	0	Note 4
	Board Average	75	0	0	75	0	0	20	15	75	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Aerospace	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0	Note 3
Engineering	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Maintenance	Other Joint	N/A	N/A	N/A	0	N/A	N/A	0	0	0	Note 4
	Board Average	6133	3	0	61	3	0	23	14	61	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Aviation	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Duty	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	33	0	4	33	0	4	3	1	33	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Cryptology	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	6	2	33	Note 2
	Service HQS	100	N/A	N/A	100	0	0	4	4	100	
	Other Joint	100	0	0	N/A	0	0	2	2	100	
	Board Average	59	3	0	59	3	0	22	13	59	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Intelligence	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	16	10	63	
	Service HQS	0	0	N/A	50	N/A	0	4	1	25	
	Other Joint	71	0	0	57	0	0	21	14	67	
	Board Average	60	0	4	60	0	4	53	22	60	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Public	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Affairs	Service HQS	100	N/A	0	N/A	0	0	1	1	100	
	Other Joint	50	0	0	N/A	0	N/A	2	1	50	
	Board Average	50	0	0	50	0	0	1	0	50	
0-5	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
Oceanography	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	0	0	0	0	N/A	N/A	2	0	0	Note 4
	Board Average	53	3	4	53	3	4	19	10	53	

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SFL	%	
0-5 Limited Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	33	N/A	100	N/A	N/A	1	1	100	
	Other Joint	100	N/A	N/A	N/A	N/A	N/A	2	2	100	
	Board Average	55	3	5	55	3	5	117	64	55	
0-5 Civil Engineer	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	33	0	0	100	0	N/A	5	3	60	
	Other Joint	0	0	0	50	N/A	0	3	1	33	Note 1
	Board Average	64	0	0	64	0	0	45	29	64	
0-5 Supply	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	9	6	66	
	Service HQS	N/A	0	0	50	0	N/A	2	1	50	
	Other Joint	100	0	0	25	0	7	5	2	40	Note 2
	Board Average	61	0.5	2	61	0.5	2	92	56	61	
0-5 Limited Duty Staff	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	40	13	0	40	13	0	5	2	40	
0-4 Unrestricted Line	Joint Staff	N/A	N/A	N/A	N/A	0	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	67	0	0	87	0	N/A	14	11	78	
	Other Joint	93	0	0	80	0	N/A	24	21	88	
	Board Average	69	1	1	69	1	1	1,111	762	69	
0-4 Engineering Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	100	0	N/A	1	1	100	
	Other Joint	N/A	N/A	N/A	100	N/A	N/A	1	1	100	
	Board Average	85	0	29	85	0	29	47	40	85	
0-4 Engineering Aerospace	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	100	N/A	N/A	100	N/A	N/A	2	2	100	
0-4 Aerospace Engineering Maintenance	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	73	2	0	73	2	0	37	27	73	
0-4 Aviation Duty	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	75	0	0	75	0	0	4	3	75	
0-4 Cryptology	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	0	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	63	2	18	63	2	18	27	17	63	

Appendix F.
GOLDWATER-NICHOLS ACT IMPLEMENTATION REPORT

GRADE	JOINT CATEGORIES	ARE SERVING IN			HAVE SERVED IN			TOTAL IN ZONE			REMARKS
		IN ZONE %	BELOW ZONE %	ABOVE ZONE %	IN ZONE %	BELOW ZONE %	ABOVE ZONE %	CON	SEL	%	
O-4 Intelligence	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	83	0	N/A	N/A	0	N/A	6	5	83	
	Board Average	75	0	0	75	0	0	84	63	75	
O-4 Public Affairs	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	100	0	N/A	100	N/A	N/A	3	3	100	
	Other Joint	100	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Board Average	71	0	0	71	0	0	7	5	71	
O-4 Oceanography	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	70	3	0	70	3	0	20	14	70	
O-4 Limited Duty	Joint Staff	N/A	0	N/A	100	N/A	N/A	1	1	100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	0	N/A	50	100	N/A	4	2	50	
	Other Joint	50	0	N/A	100	N/A	N/A	4	3	75	
	Board Average	69	1	3	69	1	3	367	253	69	
O-4 Civil Engineer	Joint Staff	100	N/A	N/A	N/A	N/A	N/A	1	1	100	
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	69	0	5	69	0	5	89	61	69	
O-4 Supply	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	0	N/A	0	0	0	Note 4
	Other Joint	100	0	N/A	100	0	N/A	5	5	100	Note 4
	Board Average	69	0	2	69	0	2	129	89	69	
O-4 Limited Duty Staff	Joint Staff	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Joint Specialty	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Service HQS	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Other Joint	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	Note 4
	Board Average	61	4	50	61	4	50	23	14	61	

Notes:

1. Small numbers involved - one additional selection in this category needed to meet objective.
2. Small numbers involved - comparison and analysis are inconclusive.
3. Only one officer considered in this category.
4. No officers considered in this category.

DEFENSE ACQUISITION WORKFORCE IMPROVEMENT REPORT

The Department continued to make significant progress in implementing its programs to enhance the professionalism of the workforce and achieve full compliance with the provisions of the Defense Acquisition Workforce Improvement Act (DAWIA). Each of the four major areas of emphasis (management of the acquisition workforce, career development, training, and education) made dramatic strides toward enhancing the quality of acquisition professionals. Uniform certification standards were implemented, critical acquisition positions were verified, and each of the military components finalized preparations to establish fully integrated military/civilian acquisition corps on October 1, 1993. Functional career boards reviewed mandatory experience, training, and education requirements to ensure the programs supported the Department's goal of enhanced competency and expertise. The Defense Acquisition University completed its first fully operational year, highlighted by the graduation of the first class of the Senior Acquisition Course.

MANAGEMENT OF THE ACQUISITION WORKFORCE

The Department reviewed and verified approximately 128,000 acquisition positions, documenting them in the Management Information System. Additionally, individual personnel entries now describe the professional training, education, and experience characteristics of each member of the acquisition workforce.

CIVILIAN/MILITARY MIX

During FY 1993, the civilian/military mix achieved a rough parity for each of the three major categories of the workforce. Civilians currently represent 81 percent of the total workforce, occupy 80 percent of the total number of critical acquisition positions, and hold 76 percent of the senior management positions within the acquisition workforce. This represents a continuation of the consistent trend toward increasing the level of civilian participation in upper management positions.

PROGRAM MANAGERS (PMs)

The development and assignment of military and civilian program managers were major issues during FY 1993. Significant efforts to identify and assign the best qualified individuals as major system program managers have resulted in high quality program managers and dramatically improved tenure for all PMs.

Since May 1990, when the House Armed Services Committee published an analysis of DoD PMs in a report entitled *Life is Too Short*, the Department increased the percentage of civilian PMs of major systems by 8 percent. This is particularly noteworthy since during this same period, the average tenure of a major system program manager increased from 24.6 months to 42 months. Additionally, the average tenure for Deputy Program Managers increased from 28 months last year to 49 months this year.

Not only has the tenure of PMs and their deputies increased, but the experience levels have also dramatically improved. The average program manager assigned during FY 1993 reported with 9.7 years of acquisition experience (DAWIA requires 8 years), and 5.3 years of experience in a program office (DAWIA requires 2 years). This increased level of experience in PMs combined with greater stability in the program leadership directly benefits the program offices.

These improvements are reinforced by the fact that only in exceptional circumstances have waivers been executed for the education, training, experience, and tenure requirements mandated for major system PMs.

Specifically, 16 waivers for tenure and 13 waivers for education, training, and experience standards were executed — a 53 percent decrease since last year.

CAREER DEVELOPMENT

New certification standards for each career path were identified and are in the process of being coordinated. These standards will result in equal rating and certification standards across all components, improved professionalism and reciprocity of certification throughout the Department, while complying with the uniformity provisions of DAWIA.

Pursuant to the FY 1993 Authorization Act, a fulfillment program was established to enable acquisition workforce members to satisfy mandatory training standards based on previous education and experience. Fulfillment is based on individual competencies required by the career management functional boards for each level of certification. This new program has already been used by the components to eliminate costly and unnecessary training of individuals whose on-the-job experience has honed their technical expertise to a level where the training would be superfluous.

TRAINING PROGRAMS

Integral to the goal of increasing the capabilities and efficiency of the workforce are the expanded training opportunities available to acquisition professionals. The Department developed an integrated training curriculum that embodies three types of courses: core courses, functional courses, and assignment-specific courses. This curriculum structure resulted from a review of the essential competencies necessary to effectively perform at the various career certification levels.

The core courses focus on the essential skills and knowledge of acquisition required by each person in the workforce. These courses, such as Fundamentals of System Acquisition Management, define a precise set of principles and skills every acquisition professional should possess. The complexity and level of sophistication of these courses increase at each certification level, providing a common knowledge base for all career fields. The anticipated result of this initiative is an increased knowledge level within the workforce and an improved understanding of the interaction between the various functional career fields. This program will ensure the workforce is cognizant of basic acquisition principles and exposed to all aspects of the systems acquisition process.

The functional courses are derived from the 12 acquisition career fields — each with a required level of proficiency for a unique functional area. These specific courses focus on the disciplined preparation of individuals within the career field by improving their understanding and awareness of the ideas, concepts, and skills essential for effective and efficient performance of their daily tasks. These courses build on the core courses, previous instruction in other functional courses, specialized training gained from experience, and other academic experiences.

Finally, assignment specific courses are driven by the performance requirements of a particular job. Attendance at these courses is tailored to students en route to, or currently serving in, jobs requiring unique skills and competencies. A classic example of an assignment specific course is Part II of the soon to be restructured Program Management Course at the Defense Systems Management College. This revised course will be specifically developed for ACAT I and II program managers.

DEFENSE ACQUISITION UNIVERSITY (DAU)

This year, the DAU consortium focussed on addressing the backlog for mandatory training and on assisting the career management functional boards to develop competencies for the 12 acquisition career fields. The backlog

will be addressed by offering approximately 35 percent more seats in the mandatory classes, without increasing infrastructure. This increase will be achieved by taking advantage of consortium-wide capabilities, certifying additional consortium schools to teach courses where requirements substantially exceed the capability of existing offerors, and by using alternative delivery methods. During FY 1994, DAU will integrate the competencies identified by the career management functional boards into its curriculum by developing 16 new courses and making major revisions to 13 others, bringing the total number of mandatory courses to 66.

The Industrial College of the Armed Forces, a member of the DAU consortium, graduated the first pilot class of 37 Senior Acquisition Course students. Based upon student and faculty input, the program has been enhanced, expanded, and made an increasingly more relevant and rigorous experience. The second pilot course is currently underway with 35 acquisition students enrolled.

EDUCATION PROGRAMS

Higher education opportunities for members of the acquisition workforce continue to grow. The Tuition Reimbursement Program and Defense Acquisition Scholarship Program have experienced dramatic increases. Tuition reimbursement grew by 63 percent over last year's figure, while the Department completed the second year of the Defense Acquisition Scholarships by doubling the enrollment. Two of the 10 students selected for the scholarship program during the first year have completed their program of study, received their Masters of Business Administration, and are now members of the acquisition workforce. Eleven new and outstanding science, engineering, and management students were selected to participate in the program. We now have a total of 19 students representing each of the military departments and the Defense Logistics Agency.

POSTURED FOR THE FUTURE

The net result of these achievements is a much more qualified, higher quality, professional workforce postured to support and implement acquisition reform initiatives. Certainly, as the size of the Department decreases, coincident with reductions in budgets and programs, the acquisition workforce must adapt accordingly. The size of the workforce will be smaller, but the efficiency and competence of the workforce will continue to increase, as it must, to meet new challenges. This will be achieved through aggressive career development programs, rigorous management standards, and expanded education and training opportunities for members of the acquisition workforce.

REPORTS

The information contained in Tables F-1 through F-17 reflects DAWIA-directed reporting requirements as of September 30, 1993. Additional reporting requirements are discussed below.

Section 1762(c)(9) — Personnel in critical acquisition positions who were reassigned after three years or longer in that critical position: Three years has not elapsed since the effective date of this requirement. This information should be available in FY 1996.

Section 1762(c)(11) — Personnel in critical acquisition positions who were reviewed for reassignment after five years in that critical position: The FY 1993 Authorization Act mandated the start date for five year reviews under Section 1734(c)(2) as October 1, 1995. Therefore, review information will not be available until FY 1996.

Section 1762(c)(13) — Number of personnel paid a bonus under Section 317, 37 U.S. Code: During FY 1993, the Service Secretaries did not request approval from the Secretary of Defense to exercise this authority.

**CRITICAL ACQUISITION POSITIONS HELD
(SECTION 1762 (b)(2))
ALL COMPONENTS**

Table F-1

Position Category		GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	O-6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management ^a	Total	26	64	1644	1096	1062	622	194	33	2926	1865	4791
PEOs		0	0	0	0	0	0	9	15	9	15	24
PMs ^b		1	0	2	10	11	144	5	11	19	165	184
DPMs ^b		0	2	9	9	91	29	7	0	107	40	147
Division Heads		3	19	369	168	314	279	137	48	823	514	1337
Proc. and Contracting	Total	38	48	1282	268	471	156	63	16	1854	488	2342
Sr. Contracting Officials		1	1	365	2	88	17	36	7	490	27	517
Division Heads		6	12	564	69	161	92	36	11	767	184	951
Business and Financial Mgmt:	Total	10	4	421	56	140	25	9	1	580	86	666
Division Heads		1	1	66	30	49	20	7	1	143	55	193
Auditing:	Total	0	0	225	0	54	0	15	0	294	0	294
Division Heads		0	0	180	0	52	0	15	0	247	0	247
Production:	Total	3	2	548	37	121	57	8	12	680	108	788
Division Heads		0	0	205	4	59	56	5	12	269	72	341
Acquisition Logistics:	Total	10	11	443	112	158	84	15	2	626	209	835
Division Heads		2	4	152	53	86	81	13	2	253	140	393
Sys. Eng. and Testing:	Total	9	16	5013	514	1823	155	243	17	7088	702	7790
Division Heads		1	2	704	89	625	100	150	13	1480	204	1684
Education, Training, and Career Development:	Total	1	3	5	36	16	7	6	0	28	46	74
Division Heads		0	3	0	6	0	5	4	0	4	14	18
Other:	Total	0	0	115	16	26	10	2	0	143	26	169
Division Heads		0	0	11	2	10	1	0	0	21	3	24
Total		97	148	9696	2135	3871	1116	555	131	14219	3530	17749

Note: DPMOs do not include Component Records.

^a Acquisition Management includes Program Management and Communications Computer Systems position categories.

^b ACAT I and ACAT II only.

**CRITICAL ACQUISITION POSITIONS HELD
(SECTION 1762 (c) (3))
COMPONENT: ARMY**

Table F-2

Position Category	GS /GM-13	O4	GS /GM-14	O5	GS /GM-15	O6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management: ^a											
Total			572	320	356	166	51	17	979	503	1482
PEOs							4	6	4	6	10
PMs ^b				3		37	1		1	40	41
DPMs ^b					37	1	1		38	1	39
Division Heads			104	34	141	19	38	11	283	64	347
Proc. and Contracting:											
Total			393	108	115	52	15	2	523	162	685
Sr. Contracting Officials			21	1	25	5	13	2	59	8	67
Division Heads			121	16	45	6	10		176	22	198
Business and Financial Mgmt:											
Total			158		31		1		190	0	190
Division Heads			37		19		1		57	0	57
Auditing:											
Total									0	0	0
Division Heads									0	0	0
Production:											
Total			236	3	57				293	3	296
Division Heads			37		24				61	0	61
Acquisition Logistics:											
Total			108	3	19				127	3	130
Division Heads			29		13				42	0	42
Sys. Eng. and Testing:											
Total			2310	81	907	12	100	4	3317	107	3424
Division Heads			295	23	393	4	63	4	751	31	782
Education, Training, and Career Development:											
Total			2	28	1	2			3	30	33
Division Heads				1					0	1	1
Other:											
Total			114	14	24	9			138	23	161
Division Heads			11	2	9				20	2	22
Total	0	0	3893	567	150	241	167	23	5570	831	6401

Source: DMDR data verified by Component R and

^a Acquisition Management includes Program Management and Communications/Computer Systems position categories

^b ACAT I and ACAT II only

CRITICAL ACQUISITION POSITIONS HELD
{SECTION 1762 (c) (3)}
COMPONENT: NAVY

Table F-3.

Position Category		GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	O-6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management: ^a	Total			620	111	347	180	66	35	1033	326	1359
PEOs								3	5		5	8
PMs ^b					3	7	73	3	4	10	80	90
DPMs ^b				3	4	36	10	6		45	14	59
Division Heads				87		63	105	55	19	205	124	329
Proc. and Contracting:	Total			298	36	122	53	18	12	438	101	539
Sr. Contracting Officials						2	5	10	3	12	8	20
Division Heads				71		35	49	8	9	114	58	172
Business and Financial Mgmt:	Total			157		47	4	3		207	4	211
Division Heads				32		20	4	3		55	4	59
Auditing:	Total									0	0	0
Division Heads										0	0	0
Production:	Total			95	15	18	53	1	12	114	81	195
Division Heads				29		10	52	1	12	40	64	104
Acquisition Logistics:	Total			185	14	62	23	7	1	254	38	292
Division Heads				54		30	23	7	1	91	24	115
Sys. Eng. and Testing:	Total			1555	78	359	57	61	8	1975	143	2118
Division Heads				254		119	57	61	8	434	65	499
Education, Training, and Career Development:	Total			3		3	4	2		8	4	12
Division Heads							4	2		2	4	6
Other:	Total									0	0	0
Division Heads										0	0	0
Total		0	0	2913	255	958	374	158	68	4029	697	4726

Source: DMDC data scrubbed by Component Records

^aAcquisition Management includes Program Management and Communications/Computer Systems position categories

^bACAT I and ACAT II only

**CRITICAL ACQUISITION POSITIONS HELD
(SECTION 1762 (c) (3))
COMPONENT: MARINE CORPS**

Table F-4

Position Category	GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	C-6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management: ^a											
Total			15	71	7	30	1	1	23	102	125
PEOs									0	0	0
PMs ^b					1	3			1	3	4
DPMs ^b					1	2			1	2	3
Division Heads			12		5	25	1	1	18	26	44
Proc. and Contracting:											
Total			14		3		1		18	0	18
Sr. Contracting Officials					1		1		2	0	2
Division Heads			2		2				4	0	4
Business and Financial Mgmt:											
Total			1	1	1				2	1	3
Division Heads									0	0	0
Auditing:											
Total									0	0	0
Division Heads									0	0	0
Production:											
Total				3		1			0	4	4
Division Heads						1			0	1	1
Acquisition Logistics:											
Total			9	2	2	1			11	3	14
Division Heads			5		1	1			6	1	7
Sys. Eng. and Testing:											
Total			24	12	6	1			30	13	43
Division Heads			16		2	1			18	1	19
Education, Training, and Career Development:											
Total				1	1				1	1	2
Division Heads									0	0	0
Other:											
Total									0	0	0
Division Heads									0	0	0
Total	0	0	63	90	20	33	2	1	85	124	209

Source: DMBIC data as of 31st August 1994.

^aAcquisition Management includes Program Management and Communications/Computer Systems position categories.

^bACAT I and ACAT II only.

CRITICAL ACQUISITION POSITIONS HELD
{SECTION 1762 (c) (3)}
COMPONENT: AIR FORCE

Table F-5

Position Category		GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	O-6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management: ^a	Total	23	64	277	594	134	246	18	30	452	934	1386
PEOs								2	4	2	4	6
PMs ^b		1		2	4	3	31		7	6	42	48
DPMs ^b			2	5	5	13	16			12	23	41
Division Heads		3	19	102	134	60	130	6	17	171	300	471
Proc. and Contracting:	Total	36	48	225	124	86	51	9	2	356	225	581
Sr. Contracting Officials			1	2	1	5	7	7	2	14	11	25
Division Heads		6	12	84	53	31	37	1	2	122	104	226
Business and Financial Mgmt:	Total	10	4	101	55	34	21	5	1	150	81	231
Division Heads		1	1	16	33	3	16	3	1	23	51	74
Auditing:	Total									0	0	0
Division Heads										0	0	0
Production:	Total	2	2	35	15	6	3			43	20	63
Division Heads				2	4		3			2	7	9
Acquisition Logistics:	Total	10	11	128	93	64	60	5	1	207	165	372
Division Heads		2	4	62	50	38	57	3	1	105	115	220
Sys. Eng. and Testing:	Total	9	16	1048	333	456	85	62	5	1575	439	2014
Division Heads		1	2	122	66	74	38	18	1	215	107	322
Education, Training, and Career Development:	Total		3		7		1			0	11	11
Division Heads			3		5		1			0	9	9
Other:	Total			1	2	2	1	2		5	3	8
Division Heads						1	1			1	1	2
Total		90	148	1615	1223	782	469	101	39	2788	1878	4666

^aAcquisition Management includes Program Management and Communications Computer Systems position categories.

^bACAT I and ACAT II only.

CRITICAL ACQUISITION POSITIONS HELD
{SECTION 1762 (c) (3)}
COMPONENT: OSD/DoD AGENCIES AND OTHER COMPONENTS

(Numbers for military members assigned OSD/DoD Agencies and other components reflected in Individual Services Report)

Table F-6

Position Category		GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	O-6	SES	Gen/ Flag Officer	Civilian Total	Military Total	Combined Total
Acquisition Management: ^b	Total	3		160		218		58		439	0	439
PEOs										0	0	0
PMs ^c								1		1	0	1
DPMS ^c				1		4				5	0	5
Division Heads				64		45		37		146	0	146
Proc. and Contracting	Total	2		352		145		20		519	0	519
Sr. Contracting Officials		1		342		55		5		403	0	403
Division Heads				286		48		17		351	0	351
Business and Financial Mgmt.	Total			4		27				31	0	31
Division Heads				1		7				8	0	8
Auditing	Total			225		54		15		294	0	294
Division Heads				180		52		15		247	0	247
Production	Total	1		182		40		7		230	0	230
Division Heads				137		25		4		166	0	166
Acquisition Logistics	Total			13		11		3		27	0	27
Division Heads				2		4		3		9	0	9
Sys. Eng. and Testing	Total			76		95		20		191	0	191
Division Heads				17		37		8		62	0	62
Education, Training, and Career Development	Total	1				11		4		16	0	16
Division Heads								2		2	0	2
Other:	Total									0	0	0
Division Heads										0	0	0
Total^a		7		1012		601		127		1747	0	1747

^aNSA - DIA not included

^bAcquisition Management includes Program Management and Contract Categories Controlled by Defense Acquisition Regulation (ACAT) and ACAT II only

ARMY ACQUISITION CORPS MEMBERS^a **(SECTION 1762 (c) (2))**

Table F-7

Career Field	GS/ GM-13	O-4	GS/ GM-14	O-5	GS/ GM-15	O-6	SES	Gen/ Flag Officer	Total
Program Management	0	183	62	278	94	114	5	12	74
Contracting, Industrial Property Management Manufacturing and Production	12	169	169	114	72	58	13	3	610
Quality Assurance	0	7	1	0	0	0	0		8
Business, Cost Estimating and Financial Management	42	2	149	0	32	0	0	0	225
Acquisition Logistics	47	10	141	0	54	0	0	0	252
Communications, Computer System	26	90	65	35	15	5	0	2	238
Systems Planning, Research, Development, and Engineering/Test and Evaluation	65	493	492	163	390	53	6	8	1670
Total	192	954	1079	590	657	230	24	25	3751

Source: Component Records

^a Acquisition corps for other components were not established until October 1, 1993

ACQUISITION CORPS EXCEPTIONS FROM EDUCATIONAL REQUIREMENTS (SECTION 1762 (c) (6) AND 1732 (b) (2) (A) AND (B))

Table F-8

Component	10 Years of Experience Section 1732 (c) (1)	24 Semester Hour Exam Section 1732 (c) (2)	Total
Army	NO EXCEPTIONS GRANTED		
Navy			
Marine Corps			
Air Force			
OSD, DoD agencies, and other components			
Total			

Source: Component Records

**PERSONNEL PARTICIPATING IN ACQUISITION INTERN,
COOPERATIVE EDUCATION, SCHOLARSHIP, AND TUITION REIMBURSEMENT
PROGRAMS DURING FY 1993 (SECTION 1762 (c) (12))**

Table F-9

Component	Interns (Sec 1742)	Cooperative Education (Sec 1743)	DoD Scholarships (Sec 174)	Tuition Reimbursement (Sec 1745 (a))	Repayment of Student Loans (Sec 1745 (b))
Army	262	2	7	417	0
Navy	381	0	6	1130	0
Marine Corps	0	0	0	85	0
Air Force	111	0	5	1415	0
OSD, DoD agencies, and other components	101	2	1	3021	0
Total	855	4	19 ^a	6068	0

Source: OSD, Acquisition Workforce Improvement Report.

^a 11 students starting their first year and 8 students starting second year of the two year scholarship program.

**PERSONNEL CERTIFIED BY ACQUISITION CAREER
PROGRAM BOARDS IN LIEU OF A BACCALAUREATE DEGREE
IN FY 1993 (SECTIONS 1762 (c) (7) AND 1732 (b) (2) (A) (II))**

Table F-10

Component	Military	Civilian
Army	NO EXCEPTIONS GRANTED	
Navy		
Marine Corps		
Air Force		
OSD, DoD agencies, and other components		
Total		

Source: OSD, Acquisition Workforce Improvement Report.

ACQUISITION WORKFORCE WAIVERS/EXCEPTIONS GRANTED DURING FY 1993 (SECTION 1762 (c) (10))

Table F-13

Component	Contracting Officer/ GS-1102 Qualification Requirements Section 1724 (d)		Acquisition Corps Eligibility Criteria Section 1732 (d)		Critical Acquisition Positions Assignment Period/ Service Obligations: Section 1734 (d)		Other Waivers to Acquisition workforce Provisions		Incumbent Qualification Exceptions: 1736 (c)	Total By Service
	Reason Code	Number	Reason Code	Number	Reason Code	Number	Reason Code	Number	Number	
Army		0		0	G	5	E & F	1 & 1	0	7
Navy		0		0	C & U	2 & 2	E	5	0	9
Marine Corps		0		0	C & D	1 & 1		0	0	2
Air Force		0		0	B & C	2 & 5			4	11
OSD, DoD agencies, and other components ^a		0		0		0		0	0	0
Total		0		0		18		7	4	29

Source: GS SLSA EPMIA Waivers and Exceptions Computer

^aNSA, DIA excluded

REASON CODE (A) ACPB screened based on demonstrated potential
(B) Promotion
(C) Reassignment in government's interest
(D) Humanitarian reassignment-discharge
(E) Service Secretary determination (PEO PIA waivers)
(F) GS SLSA assignment
(G) ACAT I PIA Reassignment

OFFICER PROMOTION RATE COMPARISONS FY 1993 COMPONENT: ARMY

Table F-14

To Grade	Categories	TOTAL NUMBER PROMOTED	% PROMOTION RATES		
			IN ZONE	BELOW ZONE ^a	ABOVE ZONE ^a
O-8	Acquisition Corps	3	30	N/A	N/A
	Non-Acquisition Equivalent Line Officers ^b	28	29.5	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	31	29.5	N/A	N/A
O-7	Acquisition Corps	2	1.4	N/A	N/A
	Non-Acquisition Equivalent Line Officers ^b	38	2.2	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	40	2.2	N/A	N/A
O-6	Acquisition Corps	38	55.7	0.6	7.5
	Non-Acquisition Equivalent Line Officers ^b	448	43.6	2.3	0.7
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	486	44.3	2.1	0.9
O-5	Acquisition Corps	127	76.9	0.6	3.2
	Non-Acquisition Equivalent Line Officers ^b	1211	61.0	5.7	1.4
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	1338	63.1	5.2	1.6

Source: Service Selection Board Results

^a%Promoted = (Number Promoted / Total Eligible Within Category)

^bBelow Zone and Above Zone Categories do not apply to General Officers

^cArmy PERSCOM Officer Personnel Management Directorate - Managed Officers

OFFICER PROMOTION RATE COMPARISONS FY 1993
COMPONENT: NAVY

Table F-15

To Grade	Categories	TOTAL NUMBER PROMOTED	% PROMOTION RATES		
			IN ZONE	BELOW ZONE ^a	ABOVE ZONE ^a
O-8	Acquisition Corps (URL/RL MP)	3	37.5	N/A	N/A
	Non-Acquisition Equivalent/Line Officers	19	46.3	N/A	N/A
	TOTAL: Acquisition and Non-Acquisition Equivalent/Line Officers	22	44.9	N/A	N/A
O-7	Acquisition Corps (URL/RL MP)	6	2.3	N/A	N/A
	Non-Acquisition Equivalent/Line Officers	24	2.3	N/A	N/A
	TOTAL: Acquisition and Non-Acquisition Equivalent/Line Officers	30	2.3	N/A	N/A
O-6	Acquisition Corps (URL/RL MP)	48	45.6	0	5.5
	Non-Acquisition Equivalent/Line Officers	241	49	1.8	1.6
	TOTAL: Acquisition and Non-Acquisition Equivalent/Line Officers	289	48.6	1.6	2
O-5	Acquisition Corps (URL/RL MP)	67	74.2	0	2.5
	Non-Acquisition Equivalent/Line Officers	344	61.7	0.2	0.7
	TOTAL: Acquisition and Non-Acquisition Equivalent/Line Officers	411	63	0.1	0.9

Source: SECDEF, Section B, and P, only.

^a%Promoted = (Number Promoted / Total Eligible Within Category)

^bBelow Zone and Above Zone Categories do not apply to Flag Officers

^cData provided for URL/RL Material Professionals (MP) since Acquisition Corps not effective until October 1, 1993. Next report will address Acquisition Corps.

OFFICER PROMOTION RATE COMPARISONS FY 1993
COMPONENT: MARINE CORPS

Table F-16

To Grade	Categories	TOTAL NUMBER PROMOTED	% PROMOTION RATES		
			IN ZONE	BELOW ZONE	ABOVE ZONE
O-8	Acquisition Corps	0	0	0	0
	Non-Acquisition Equivalent Line Officers	11	56.2	0	50
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	11	56.2	0	50
O-7	Acquisition Corps	0	0	0	0
	Non-Acquisition Equivalent Line Officers	15	11.1	1.2	0.8
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	15	11.1	1.2	0.8
O-6	Acquisition Corps	7	71.4	0	25
	Non-Acquisition Equivalent Line Officers	91	41.8	0.8	1.2
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	98	41.7	0.8	1.9
O-5	Acquisition Corps	3	50	0	0
	Non-Acquisition Equivalent Line Officers	194	53	1	3
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	197	54.2	1	3

Source: Defense Acquisition Workforce Study

% Promoted = (Number Promoted / Total Eligible Within Category)

OFFICER PROMOTION RATE COMPARISONS FY 1993
COMPONENT: AIR FORCE

Table F-17

To Grade	Categories	TOTAL NUMBER	% PROMOTION RATES		
		PROMOTED	IN ZONE	BELOW ZONE ^a	ABOVE ZONE ^a
O-8	Acquisition Corps	3 ^a	27	N/A	N/A
	Non-Acquisition Equivalent Line Officers	19 ^a	25.7	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	22 ^a	25.9	N/A	N/A
O-7 ^b	Acquisition Corps	N/A	N/A	N/A	N/A
	Non-Acquisition Equivalent Line Officers	N/A	N/A	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	39	2.2	N/A	N/A
O-6 ^b	Acquisition Corps	N/A	N/A	N/A	N/A
	Non-Acquisition Equivalent Line Officers	N/A	N/A	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	551	41.6	2.5	4.5
O-5 ^b	Acquisition Corps	N/A	N/A	N/A	N/A
	Non-Acquisition Equivalent Line Officers	N/A	N/A	N/A	N/A
	TOTAL Acquisition and Non-Acquisition Equivalent Line Officers	1321	63.4	1.7	1.5

Source: Service Selection Board Reports

% Promoted = (Number Promoted / Total Eligible Within Category)

^a FY 1992 promotion board released during FY 1993. No promotion board held during FY 1993.

^b O-7, O-6, and O-5 promotion rate comparisons not available. Acquisition Corps personnel were not identified prior to converting the selection boards in FY 1993.

FREEDOM OF NAVIGATION

The United States remains committed to the principle that the world's seas must be open to all nations. The armed forces continue to be the instrument for the United States to exercise and assert its navigation and overflight rights and freedoms consistent with the 1982 Law of the Sea Convention. As a matter of policy, the United States will not acquiesce in unilateral acts of other states that unlawfully restrict the rights and freedoms of the international community in navigation and overflight and other related high seas uses. When nations do not exercise these rights, the international community may come to accept claims constraining use of the seas as binding. Accordingly, it is necessary for maritime nations, such as the United States, to protest excessive claims through diplomatic channels and to exercise their navigation and overflight rights in the disputed regions. The United States has accepted this responsibility as an important tenet of national policy. Therefore, the Department of Defense maintains an active Freedom of Navigation program. From October 1, 1992, to September 30, 1993, Freedom of Navigation assertions were conducted against the following countries with maritime claims contrary to international law.

Country	Excessive Claims Challenged
Burma*	Prior permission for warship to enter 12 nautical mile (nm) territorial sea
Cambodia*	Prior permission for warship to enter 12 nm territorial sea, excessive straight baselines
China*	Prior permission for warships to enter 12 nm territorial sea
Djibouti*	Excess straight baselines
Ecuador*	200 nm territorial sea
Egypt	Prior notification for warship to enter 12 nm territorial sea
India*	Prior notification for warship to enter 12 nm territorial sea, historic claim to Gulf of Mannar
Iran*	Prior permission for warship to enter 12 nm territorial sea
Maldives*	Prior permission for warship to enter 12 nm territorial sea
Mauritania	Excess straight baselines
Nicaragua*	200 nm territorial sea (and overflight clearance); 25 nm security zone
Oman*	Excessive straight baselines; recognizes only innocent passage, not transit passage, through international straits
Peru*	200 nm territorial sea
Philippines	Excessive straight baselines; claims archipelagic waters as internal waters
Somalia*	200 nm territorial sea
Sudan*	Prior permission for warship to enter 12 nm territorial sea
Sweden	Prior permission for warship to enter 12 nm territorial sea

*Denotes that Freedom of Navigation assertion was also conducted in FY 1992

In addition, military craft frequently conducted routine transits on, over, and under international straits, such as the Strait of Gibraltar and Strait of Hormuz, and through archipelagic sea lanes, such as those of Indonesia and the Philippines, in accordance with the 1982 Law of the Sea Convention.