Annual Report

to the President and the Congress

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A NEW STRATEGY FOR A NEW ERA

American leadership in the world has never been more important than it is today. Exerting leadership abroad can make America safer and more prosperous -- by deterring aggression, fostering the peaceful resolution of dangerous conflicts, underpinning stable foreign markets, encouraging democracy, and working with others to create a safer world and to resolve global problems. Without active U.S. leadership and engagement abroad, threats will worsen and opportunities will narrow. Without the necessary commitment, the United States will lose influence over events abroad that affect its security and well-being at home. If America chooses not to lead in the post-Cold War world, it will become less secure.

The imperative for American leadership arises from the nature of international relations on the eve of the 21st century, the unique position of the United States, and the rapid pace of global change. The world today is more complex and integrated than at any time in history. The number of active participants - nation states and, increasingly, nonstate actors - pursuing their interests and vying for influence continues to increase. In some cases, this competition is proceeding with fewer international constraints than in the bipolar world of the Cold War era. At the same time, the world is becoming increasingly interdependent. International borders are no longer the barriers they once were. While interdependence has many positive features, such as greater prosperity, it also means that events in other parts of the world are increasingly able to affect the United States.

American security is now increasingly tied to the security and stability of other regions. Imagine, for example, the impact on the U.S. economy of any major disruption in trade as a result of instability in Asia or Europe. One quarter of the U.S. gross domestic product is now tied to either exporting or importing. Potential events that would not have been at the center of America's security concerns in the past - the spread of ethnic conflict in Europe, the breakdown of law and order in the Caribbean, the disruption of trade - could pose real threats to the security and well-being of Americans.

Since the founding of the Republic, the U.S. government has always sought to secure for its people a set of basic objectives:

- The protection of their lives and personal safety, both at home and abroad.
- The maintenance of the nation's sovereignty, political freedoms, and independence with its values, institutions, and territory intact.
- Their material well-being and prosperity.

With the collapse of the Soviet Union and the changing security environment, the nature of threats to U.S. national security interests has changed. Likewise, new opportunities have arisen for the United States, in concert with other like-minded nations, to advance its long-term interests, promote regional stability, and shape the international environment in favorable ways.

Threats to the interests of the United States, its allies, and its friends can come from a variety of sources. Prominent among these are:

- Attempts by regional powers hostile to U.S. interests to gain hegemony over their regions through aggression or intimidation.
- Internal conflicts among ethnic, national, religious, or tribal groups that threaten innocent lives, force mass migration, and undermine stability and international order.

- Threats by potential adversaries to acquire or use weapons of mass destruction, including nuclear, chemical, and biological weapons and their means of delivery.
- Threats to democracy and reform in the former Soviet Union, Central and Eastern Europe, and elsewhere.
- Subversion and lawlessness that undermine friendly governments.
- Terrorism.
- Threats to U.S. prosperity and competitiveness.
- Global environmental deterioration.
- The illegal drug trade.

Many of these threats are global in scale. They cannot, for the most part, be adequately addressed unilaterally, either by the United States or any other single nation state. Hence, it will be increasingly important that the United States secures the cooperation of a number of groups, nations, and international organizations to protect Americans from such threats.

NATIONAL SECURITY STRATEGY

The Administration's National Security Strategy recognizes both that the world continues to confront the United States with serious threats and that interdependence is an inescapable reality. To protect and advance U.S. interests, then, the American government must be able to influence the policies and actions of others beyond its borders. This mandates that the United States remains engaged abroad, particularly in regions where its most important interests are at stake. At the same time, it is essential that U.S. allies and friends share responsibility for regional and global security more broadly. The United States and its allies must work together to help build a more peaceful and prosperous world. This means, among other things, taking pragmatic steps to enlarge the world's community of free-market democracies. To the extent that democracy and market economics hold sway in other nations, the United States will be more secure, prosperous, and influential, while the world as a whole will be more humane and peaceful.

As the President's National Security Strategy states, "Our national security is based on enlarging the community of market democracies while deterring and containing a range of threats to our nation, our allies and our interests." The three principal components of this strategy of engagement and enlargement are:

- Enhancing security. The United States must maintain a strong defense capability and promote cooperative security measures.
- Promoting prosperity at home. The United States will pursue policies which will underwrite its own economic strength by working with other countries to create a more open and equitable international trading system and by spurring global economic growth.
- Promoting democracy. The United States will work to protect, consolidate, and enlarge the community of free-market democracies around the globe.

These goals underscore that the only responsible strategy for the United States is one of international engagement. Isolationism in any form would reduce U.S. security by undercutting the United States' ability to influence events abroad that can affect the well-being of Americans in many ways.

This does not mean that the United States seeks the role of global policeman. But it does mean that America must be ready and willing to protect its interests, both now and in the future. As the United States moves into the next century, being militarily ready will require more than sustaining a high level of training or morale, or maintaining good, reliable equipment and facilities. While such measures are critical, being ready also means being prepared to conduct a broad range of military missions, including

new ones, without spreading U.S. military forces too thin. It is vital to the United States that its military forces retain their current ability to successfully function in a wide range of operational environments.

The forces and programs developed in the Bottom-Up Review and the Nuclear Posture Review outlined in this document will provide the capabilities needed to support this ambitious strategy. U.S. forces today are without question the best in the world. The Administration's defense program will keep them that way.

Regional Implications of U.S. National Security Strategy

The security relationships that the United States and its allies and friends have inherited from the Cold War are key to advancing the post-Cold War agenda. It is difficult to imagine that progress toward a more peaceful and prosperous world would not be impeded by a weakening of this security framework. The top priority must be to strengthen and adapt U.S. partnerships to meet post-Cold War challenges. The alternative -- an erosion of U.S. alliances and trading partnerships -- would lead to widespread instability and diminished U.S. influence over international events and decisions that affect the everyday lives of Americans. The United States will also seek to establish new security relationships to protect and advance its interests.

In Europe, the end of the Cold War has opened up both new opportunities and new challenges. Working with its NATO allies, the United States has sought to respond to these historic developments. The goal of the United States is an integrated, democratic Europe cooperating with the United States to keep the peace and promote prosperity. Many institutions will play a role in this integration, but NATO must be central to this process. At the January 1994 NATO Summit in Brussels and later at the December 1994 North Atlantic Council (NAC) Ministerial, the Alliance adopted a series of initiatives, including establishment of the Partnership for Peace and the launching of the process of NATO's gradual expansion. These steps were designed to consolidate transitions toward democratic societies and market economies in Central and Eastern Europe and the former Soviet Union and to promote security throughout the region.

The Secretary of Defense has made building a successful defense and military partnership with Russia, Ukraine, and the other New Independent States of the former Soviet Union 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. A steady, continued engagement is called for which focuses on the important stake the United States and its allies have in building a constructive security relationship with the New Independent States. The United States will strive to manage differences with Russia to ensure that both nations' overriding common objectives take priority.

East Asia and the Pacific continue to grow as areas of importance to U.S. security and prosperity. This region has experienced unprecedented economic growth -- growth that increased U.S. trade in the region to $374 billion and supported 2.8 million American jobs in 1993 alone. This economic growth has been made possible by the security and stability provided to the region by the presence of U.S. military forces over the last 40 years. Security, open markets, and democracy go hand in hand in this region.

The United States has begun to share responsibility for regional security in the Asia Pacific more widely with its friends and allies, who provide host-nation support for U.S. forces and contribute to U.N. peace operations and international aid. Japan, for example, has become a leading source of international aid, and other Asian states contributed over 20,000 of the 72,000 U.N. peacekeepers deployed as of October 1994. Yet there is no substitute for a forward-based U.S. military presence, or for U.S. leadership like that which brought together a broad coalition to convince North Korea to relinquish its nuclear weapons program. The United States will remain active in this vital region.

The United States has enduring interests in the Middle East, especially pursuing a comprehensive breakthrough to Middle East peace, assuring the security of Israel and friendly Arab states, and maintaining the free flow of oil at reasonable prices. The United States will continue to work to extend the range of peace and stability, while implementing a strategy of dual containment of Iraq and Iran as long as those states pose a threat to U.S. interests, to other states in the region, and to their own citizens. In Southwest Asia, the United States will maintain its long-standing presence to cooperate with and assist those nations of the region that choose peace.

The overarching U.S. objectives in the Western hemisphere are to sustain regional stability and to increase regional cooperation. Such an environment will help assure that recent strides in democracy, free markets, and sustainable development can continue and that further progress can be made by the nations of the region. As in other regions, the Defense Department is working to enhance responsibility sharing by its hemispheric friends and allies. Contributions might include cost-sharing for U.S. deployments, the provision of non-U.S. forces to military contingencies, support for international development and democratization, and personnel or money for U.N. peace operations.

In Africa as well, there is fertile ground for promoting democracy, sustainable development, and conflict resolution. In particular, Administration policy seeks to identify and address the root causes of conflicts and disasters that affect U.S. national interests before they erupt. Such efforts include support for demobilization of oversized militaries, demining, effective peace operations, and strong indigenous conflict resolution facilities, including those of the Organization of African Unity and subregional organizations.

In all of these regions, broadening the dialogue on cost-sharing is essential for sustaining and adapting U.S. bilateral relationships. To reflect post-Cold War realities, a more comprehensive approach is needed that takes into account the wide variety of contributions that states can make toward regional and global security. In addition to providing host nation support for U.S. forces, contributions to international security can include maintaining capable military forces, assigning these forces to coalition missions like Operation Desert Storm or to U.N. peacekeeping, and providing political and financial support for such shared objectives as international economic development or dismantlement of North Korea's nuclear weapons program.

The Department of Defense uses the term responsibility sharing to refer to this broad range of contributions. It is important to consider such contributions in the context of various states' abilities to contribute, their comparative advantages in providing some kinds of contributions rather than others, and the security costs and risks that they themselves face. U.S. friends and allies have made increasingly important contributions to international security since the end of the Cold War, most notably in providing over 245,000 troops to the Operation Desert Storm coalition and $70 billion to the United States and other coalition members to help defray their expenses in the war. Yet there remains room for improvement toward still more equitable and cost-effective responsibility sharing. The Department of Defense is committed to working with Congress and with U.S. friends and allies toward this goal.

The Administration has also argued for the need for balance between defense and domestic priorities. While these priorities may compete in the short term, they are wholly complementary in the longer term. Robust U.S. military capabilities are needed to sustain U.S. international commitments; a strong economy is the essential basis for a strong defense posture. Similarly, the United States cannot be secure if its major trade and security partners are threatened with the specter of aggression or intimidation, nor can it be prosperous if international economic cooperation is breaking down.

So prudence dictates that U.S. strategy strikes a balance -- America's overall budget must invest in future prosperity and productivity while avoiding the instabilities and risks that would accompany attempts to withdraw from its security responsibilities in critical regions.

CHALLENGES IN THE NEW SECURITY ENVIRONMENT
INTRODUCTION

These past few years have changed the security equation around the world, but one fundamental fact has not changed. The United States will remain a global power with global interests. Protecting these interests requires U.S. security commitments around the globe and, when U.S. interests are threatened, a willingness to use American military forces. Therefore, the Department of Defense must maintain well-trained, well-equipped, and highly effective armed forces. When the call comes, the nation wants its armed forces to be ready to respond, to succeed quickly, and to suffer the fewest possible casualties.

These security requirements can be defined in terms of three challenges. The first challenge is to take every appropriate action to prevent a reemergence of the nuclear threat that the United States faced during the Cold War. There are still about 25,000 nuclear weapons in Russia and three other former Soviet republics. Today, the Department is focused on helping Ukraine, Belarus, and Kazakhstan eliminate the former Soviet nuclear arsenal on their soil and helping Russia reduce its arsenal.

The United States also faces other nuclear threats through the danger of proliferation, and U.S. efforts in Iran and in the recent Agreed Framework with North Korea exemplify vigilance in preventing the spread of weapons of mass destruction. For America's part, the Department has recharted it own nuclear course through the Nuclear Posture Review, which maintains a prudent level of U.S. nuclear forces to deter or defend against any possible threat or aggression. Ballistic missile defenses are a key element in responding to the dangers posed by nuclear and other weapons of mass destruction, as well as protecting U.S. fighting forces from tactical ballistic missiles.

The second challenge is to determine the appropriate strategy and force structure for the new era and to continue to properly manage the post-Cold War drawdown of the U.S. armed forces without sacrificing the readiness of these forces to respond to threats in an increasingly complex world. Historically it has been difficult to maintain ready, capable forces while reducing the military. The rapid drawdown of U.S. forces after World War II led to problems in the Korean War. The drawdown after the Vietnam War also created imbalances in U.S. forces. The Department is currently about two-thirds of the way through a resource drawdown, which from the mid-1980s to the mid-1990s will amount to about a 40 percent reduction in the budget in real terms. The challenge is to carry out this reduction while maintaining the right size, shape, and quality of forces needed to defend America's interests in the post-Cold War world. The Administration's Bottom&-Up Review (BUR), conducted between February and October 1993, met this rightsizing challenge by assessing the threats and opportunities of the new security environment, articulating a defense strategy that would protect and advance U.S. interests in this new era, and then determining the military forces and programs necessary to support this strategy. The budget priorities have been allocated to support that strategy.

The third challenge is to reformulate policies for the use or threat of use of American military power. In this new security environment, it seems the United States will face virtually limitless calls for American involvement in containing threats. The United States does not, however, have limitless resources. America neither can nor should respond to every crisis or conflict. Therefore, one of the principal challenges America faces as a nation in this new era is to decide when and how to employ its military forces and assets in the pursuit of national objectives.

PREVENTING THE REEMERGENCE OF A POST-COLD WAR NUCLEAR THREAT

The Cold War, particularly the Cold War nuclear threat, had four distinguishing characteristics. First, nuclear deterrence was a primary focus of the Department, consuming enormous resources, upwards of about $50 billion a year during the peak years, and occupying some of America's most talented scientists and engineers. Second, this period was distinguished by a dangerous arms race between the United States and the Soviet Union. Third, it gave rise to a web of treaties which were intended to control that arms race and reduce the danger of war. Finally, during much of the Cold War the United States lived with the reality of Mutual Assured Destruction, or MAD. By the late 1960s, both the United States and the Soviet Union had the capability to launch a retaliatory nuclear strike that would effectively destroy the other's society.

Now, with the end of the Cold War, there have been fundamental changes. The nuclear threat posed by the former Soviet Union is now greatly reduced and of a different character. Cooperative efforts to reduce and eliminate nuclear weapons in states of the former Soviet Union have seen success and have contributed significantly to U.S. security. At the same time, the spread of nuclear and other weapons of mass destruction (WMD) poses a large and growing threat to U.S. interests and security around the world. The Department has undertaken a number of initiatives to address these changes.

Cooperative Threat Reduction

Only one country -- Russia -- has sufficient nuclear weapons to threaten U.S. national survival. Today Russia is a partner rather than an enemy; but in Russia and the other New Independent States, the outcome of the political, economic, and social reforms that are underway is very uncertain. U.S. policy toward Russia must take into account both the promise that comes with the ending of the Cold War and the danger of a recurrence -- in very different forms -- of the nuclear threat.

With the demise of the Soviet Union, Congress initiated the Nunn-Lugar Cooperative Threat Reduction (CTR) program to assist the New Independent States in the destruction and dismantlement of nuclear, chemical, and other weapons of mass destruction and to prevent proliferation of those weapons. CTR directly improves U.S. national security by helping to reduce the threat from weapons of mass destruction and weapons production capabilities in Russia, Belarus, Kazakhstan, and Ukraine. CTR consists of 36 cooperative projects between the United States and Russia, Belarus, Ukraine, and Kazakhstan that help to dismantle the former Soviet nuclear arsenal, enhance nonproliferation efforts, reorient the Soviet weapons industry to civilian production, and generally help reduce the former Soviet force structure.

The CTR program provides dismantlement and demilitarization assistance to Russia, Belarus, Kazakhstan, and Ukraine, with priority placed on accelerating strategic offensive arms elimination. Additionally, the CTR program provides assistance to enhance the safety and security of nuclear materials with emphasis on strengthening the entire chain of custody -- from weapons elimination and dismantlement to the ultimate storage of plutonium. Another important CTR project involves assistance to Russian efforts to destroy the 40,000 tons of declared chemical weapons agent Russia inherited from the former Soviet Union. Without substantial technical and monetary assistance, Russia will have difficulties meeting the Chemical Weapons Convention (CWC) destruction schedules. The CTR program is assisting Russia to choose a technology to destroy its chemical stockpiles, as required by the CWC. Finally, future CTR priorities include efforts to demilitarize the nuclear infrastructure which supported the massive Soviet weapons arsenal.

The CTR program is a small investment with a big payoff. The United States spent billions of dollars defending against weapons of mass destruction in the Soviet Union during the Cold War. CTR is a cost-

effective way of eliminating the need to defend against these weapons in the years to come. Continuing this program of defense by other means will continue to enhance U.S. national security for the future.

Counterproliferation Initiative

The Department's motivation for its counterproliferation strategy was born of military necessity resulting from the experiences of the Gulf War. Saddam Hussein's activities with weapons of mass destruction, ranging from a surprisingly large nuclear weapons development program to the actual use of ballistic missiles, demonstrated the need for DoD to take into account the likely presence of WMD in major regional conflicts.

Preventing proliferation of nuclear, biological, chemical, and missile capabilities is, and will remain, the paramount objective of DoD's Counterproliferation Initiative. Counterproliferation efforts are not alternatives to nonproliferation, but add prudent non-nuclear means to deter and respond to WMD use against U.S. forces or allies. While U.S. policies are directed at preventing proliferation in the first place, determined proliferators often will be able to succeed because of worldwide advances in technology and greater access to dual-use technology and material in world trade. Certain countries of concern to the United States are among the most determined to get this technology. Where proliferation occurs, the United States must be prepared to protect its troops, interests, and allies.

Military preparedness is at the very heart of what is new about DoD's Counterproliferation Initiative. Unlike during the Cold War, in today's security environment U.S. forces deployed to defeat aggression in key regions of the world will likely face the use, or threat of use, of weapons of mass destruction. DoD's Counterproliferation Initiative is the response to these new circumstances. Through these programs, the Department is working to ensure that the threat from, and the implications of, weapons of mass destruction are integrated into every aspect of defense planning, programming, and acquisition. The Counterproliferation Initiative is oriented toward five key areas: policy and doctrine formulation, military responses, intelligence support, new technologies, and international cooperation.

The Agreed Framework with North Korea reflects the seriousness with which the United States approaches the challenge of nuclear proliferation. The paramount concern in this critical region was halting the existing North Korean nuclear program, poised last June to leap forward in its production of weapons-grade plutonium. Under the Agreed Framework, North Korea has halted and must eventually dismantle its nuclear weapons-related program, and comply fully with Nuclear Non-Proliferation Treaty and International Atomic Energy Agency (IAEA) full-scope safeguards. The Agreed Framework has been structured in a step-by-step fashion and will be verified by both the IAEA and the United States. If the North Koreans fail to comply, the United States and the international consortium will cease providing the financing of alternative sources of energy in the form of heavy heating oil and proliferation-resistant nuclear reactors and cease the provision of other benefits. If fully implemented, this agreement will have prevented the emergence of a new and dangerous nuclear power and will have made a crucial contribution to regional stability.

BALLISTIC MISSILE DEFENSES

Another aspect of protecting U.S. forces and allies from the threat of WMD is increased emphasis on theater missile defense. As a top priority, the Department is continuing to implement the rapid development and deployment of theater missile defenses to protect forward-deployed U.S. and allied forces and allied population centers. This focus will address the immediate threat to U.S. forces deployed throughout the world. The second priority is national missile defense technology which will provide a hedge against the emergence of a strategic ballistic missile threat to the United States.

The national missile defense technology readiness program provides this hedge because its objective is to develop and maintain the option to deploy an early ground-based antiballistic missile defense capability for the United States against limited attacks by ballistic missiles. This program will ensure the capability to deploy a national missile defense before a new strategic ballistic missile threat could achieve operational status.

Nuclear Posture Review

Since the Cold War has ended, the United States has seized the opportunity to make fundamental changes. The United States has dramatically reduced nuclear program expenditures, from $50 billion a year heading down to $15 billion a year with a corresponding reduction in personnel devoted to this program. Instead of competition and buildup of weapons, there is cooperation and reductions. Since 1988, the United States has reduced U.S. strategic nuclear weapons by 50 percent and tactical nuclear weapons by 90 percent. Programs have been terminated or cut back, such as the small Intercontinental Ballistic Missile and the Peacekeeper missile. Although treaties remain essential, unilateral and informal bilateral reductions in nuclear weapons play a much greater role in U.S. security.

Along with these dramatic changes, the U.S. nuclear posture -- the way DoD thinks about nuclear weapons -- needed to change. To undertake this change and rechart the course of the U.S. nuclear posture, the Department undertook the Nuclear Posture Review.

The Nuclear Posture Review is the equivalent, for nuclear forces, of the 1993 Bottom-Up Review of conventional forces, undertaken to address the significant changes in America's role in the world and the military consequences of these changes. The Nuclear Posture Review was the first review of U.S. nuclear policy in 15 years, and the first ever to include policy, doctrine, force structure, command and control, operations, supporting infrastructure, safety, security, and arms control in a single review.

The enduring reality of nuclear weapons in the post-Cold War world underscores the importance of the United States retaining a prudent level of nuclear forces. The United States will retain strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against U.S. vital interests and to convince it that seeking a nuclear advantage would be futile. Therefore, the United States will continue to maintain nuclear forces of sufficient size and capability to hold at risk a broad range of assets valued by such political and military leaders. Against this backdrop, the Nuclear Posture Review dealt with two major issues. The first issue was how to achieve the proper balance between leading the way to a safer world and hedging against the unexpected. Leading involves creating the conditions for further, continuing reductions of nuclear weapons. Given that there are still approximately 25,000 nuclear weapons in the former Soviet Union, the United States needed to hedge against a reversal of reforms and the nuclear reduction process and a return to an authoritarian military regime in Russia hostile to the United States.

The second issue faced during the Nuclear Posture Review was how to improve the safety and security of the remaining nuclear forces. Due to instabilities rising from dramatic social, political, and economic reforms underway in Russia and the other New Independent States, the United States must be especially concerned with the security of nuclear components and material in those nations. Thus, the Review considered what actions and programs should be undertaken to fully achieve those benefits, both in the United States and in Russia.

One of the most important results of the Nuclear Posture Review was a reduction in the strategic nuclear force structure the United States plans to retain after START II implementation. Although the total number of warheads does not differ from that allocated by the START II Treaty, the Nuclear Posture

Review recommended several adjustments in strategic nuclear force posture and eliminated two entire categories of nonstrategic nuclear weapons. The United States is encouraging Russia to make similar reductions.

While no new strategic nuclear systems are either under development or planned, the weapons aboard the retained systems represent the leading edge of technology, both in safety and effectiveness. These changes create a more stable and higher quality force that will allow for further strategic arms reduction if appropriate, without compromising security or the nuclear guarantee.

In the Nuclear Posture Review, the Department of Defense has struck a prudent balance between leading the way to a world with fewer weapons and hedging against the unexpected. It recognizes that, even in the post-Cold War environment, the United States continues to require a nuclear deterrent. The strategic triad has been streamlined and adjusted, as have nonstrategic nuclear forces, to account for the reduced role nuclear weapons play in U.S. national security. Major force reductions and cost savings are already underway, leading to a smaller, safer, and more secure U.S. nuclear force.

RIGHTSIZING THE FORCE AND MANAGING THE DRAWDOWN

The end of the Cold War left the United States' armed forces with a strategy, force structure, and infrastructure no longer appropriate to the new security environment. This situation presented the Department of Defense with a two-part challenge: first, to determine the right size and structure of U.S. forces to protect and advance American interests in this new era; and second, to manage the reduction and reshaping of American forces so that they remain the most ready and capable military forces in the world.

Refining and Implementing the Bottom-Up Review

This two-fold challenge motivated the Department to undertake a back-to-basics review of the U.S. defense strategy, military forces, and overall defense program. This unprecedentedly comprehensive and collaborative undertaking came to be known as the Bottom-Up Review.

The BUR provided the blueprint for sizing and shaping U.S. general purpose forces and continues to be refined as the basis for the Administration's five-year defense program. The BUR involved extremely close cooperation between the civilian and military staffs in DoD. The Joint Staff and the Office of the Secretary of Defense conducted extensive analyses of many types of operations to identify requirements representative of those U.S. forces should be able to meet to carry out the nation's defense strategy.

Based on an in-depth assessment of the new security environment and a rethinking of U.S. defense strategy, the Bottom-Up Review determined that U.S. forces must be prepared to meet four key requirements. First, they must be able, together with regional allies, to fight and win two nearly simultaneous major regional conflicts. Second, U.S. forces must be able to maintain a strong U.S. overseas presence in peacetime. Third, they must be able to conduct a variety of operations short of a major regional conflict, operations which still require significant combat forces and specific capabilities. And finally, they must be able to deter and prevent the effective use of weapons of mass destruction against U.S. territory, forces, and allies.

Taking these requirements into account, and the additional requirement to use limited resources efficiently, the Department of Defense is in the process of implementing the BUR and building the righ-size force to meet the security challenges of the post-Cold War world. This process is detailed in Part III of this report.

While the Bottom-Up Review provided the analytic framework for the defense program, it was never intended to be the final word for U.S. defense planning. The Review established the broad outline of the defense program, but the Department understood that many of the details of that defense program were still to be defined. It was also understood that the results of the Bottom-Up Review could not remain stagnant as the world changed. Therefore, the BUR identified areas requiring further exploration and assessment, as well as areas that would have to be constantly refined within the overall framework.

In addition to ongoing examination since the BUR's completion, the Department has undertaken a number of major efforts to broaden and refine the analysis underlying the U.S. defense program. For example:

- The Chairman of the Joint Chiefs of Staff is sponsoring a series of wargames, referred to as Nimble Dancer, to assess the capability of the 1997 force and the future BUR force with enhancements to win two nearly simultaneous major regional conflicts. Participants include representatives from the Joint Staff, Office of the Secretary of Defense, the Services, and all of the combatant commands.
- The Department recently completed an analysis to update the Mobility Requirements Study of 1992, based on the forces and defense strategy established in the Bottom-Up Review. This Mobility Requirements Study Bottom-Up Review Update reexamined DoD's requirements for strategic sealift, prepositioning, and airlift and validated the major sealift enhancement programs established by the original study as well as the mobility improvements included in the BUR.
- The intelligence community within DoD conducted a study of its requirements now that the Cold War is over, known as the Intelligence Bottom-Up Review. This study, which included participants from the military operational community as well as the intelligence community, assessed the adequacy of intelligence capabilities to support the ability of U.S. forces to fight and win two nearly simultaneous major regional conflicts.

While these efforts have confirmed the BUR's overall findings and direction, they have also recommended important adjustments to the defense program. These follow-on efforts validate the results of the BUR as a foundation for DoD defense planning and illustrate the flexibility of the Review as an evolving framework.

Achieving Critical Force Enhancements

In order to ensure that a smaller force is capable of supporting a still ambitious U.S. defense strategy, the BUR identified several critical force enhancements: improvements to strategic mobility, including airlift, sealift, and prepositioning; advanced precision-guided munitions to increase the lethality and survivability of U.S. forces; enhancements to surveillance and command, control, and communication capabilities; and improved readiness among selected reserve component forces, particularly 15 brigades of the Army National Guard. With these enhancements, the programmed force will be able to support the strategy well into the next century. These critical enhancements are a work in progress, and the Department is monitoring their progress closely.

Sustaining Readiness

The key test of the Department's success in managing this drawdown is whether U.S. forces are ready to deploy and fight effectively, at a moment's notice. Generally, there are three kinds of readiness: near, medium, and long-term. None of these categories is more important than the others, but some require more immediate attention.

Near-term readiness refers to the ability of U.S. forces to perform their assigned tasks right now, if called upon to do so. This type of readiness requires constant attention and, to a large extent, robust operation and maintenance (O&M) funding for each Service. The FY 1995 budget included an increase of 5.7 percent in the O&M accounts to support a force that is 7 percent smaller; the proposed FY 1996 budget is similarly robust.

While the events of last year demonstrated that U.S. forces must be ready, they also highlighted the challenges associated with keeping them in that condition. Because of numerous contingency operations and delays in the supplemental appropriations needed to pay for them, the Department experienced some cash flow shortfalls that were particularly acute in the last quarter of FY 1994. In response, the Department reallocated O&M funding to those units actively engaged in operations and those that must be ready to deploy early should a major regional conflict arise. As a consequence, readiness in a few other units dipped below normal peacetime levels. Now that the funds from supplemental appropriations have been received, these units will be brought up to their normal peacetime readiness levels. However, this situation highlights the need for quick action, from both the Department and Congress, on supplemental appropriations to cover the costs of contingency operations conducted by U.S. forces. In addition, the Department is requesting a Readiness Preservation Authority which would sustain readiness-related activities while the Department awaits supplemental appropriations to pay for contingency operations late in the fiscal year.

Medium-term readiness is associated most closely with the morale and esprit de corps of U.S. soldiers, sailors, airmen, and Marines. These intangibles are maintained by ensuring the best possible quality of life for people in uniform and their families. Quality of life falls into three general categories: standard of living for servicemembers; demands made on personnel, especially time away from family; and other ways people are treated while in the service.

Maintaining a good quality of life for the men and women of the armed forces is crucial to readiness because it helps to attract and retain well-trained, highly skilled people with good morale. No weapon system is better than the people who operate and maintain it; therefore, in allocating resources, the Department puts people first in its priorities.

President Clinton announced an initiative to increase the Department's budget by $25 billion over the next six years. This was specifically targeted to maintain the readiness of U.S. forces. This initiative includes money to fully fund training, reduce maintenance backlogs, fund munitions requirements, and alleviate the high tempo of operations for selected units.

Long-term readiness is influenced most by modernization of military equipment. The technological advantage enjoyed by U.S. forces is crucial in any conflict. Technological advantages also allow for more efficient use of U.S. forces.

The Department must make some tough, wise choices concerning how to spend its resources to upgrade or build new weapon systems. Some will have to be delayed or cancelled. The President's initiative to boost defense spending over the six-year budget period will allow DoD to keep more of its modernization programs on track. In any event, the Department retains the ability to support the National Security Strategy, while the force enhancements identified in the Bottom-Up Review are being funded.

Implementing the Drawdown

As it continues to reduce force structure, the Department also must reduce its overhead and do business better. It is crucial that every possible defense dollar goes to maintaining strong forces. There are three

ways the Department is improving efficiency: cutting infrastructure, reforming the acquisition system, and promoting integration of the defense and commercial industrial bases.

The base realignment and closure (BRAC) process is central to reducing unneeded military infrastructure. The base closings authorized in 1991 and 1993 are being implemented now, and a new round of base closures will begin in 1995. But, the Department must do more to bring infrastructure in line with force structure to get the savings needed. For instance, while force structure has been reduced by more than 30 percent, infrastructure has been reduced less than 20 percent.

The Department is also in the process of overhauling its acquisition system by making three revolutionary changes: buying commercial products more often, making greater use of commercial buying practices, and replacing military specifications with performance standards. In 1994, Congress passed the Federal Acquisition Streamlining Act, which will allow the Department to fully pursue these changes. Additionally, DoD has implemented procedures to ensure that the use of performance standards will be the norm when procuring equipment, and that military specifications will only be used in cases where they are absolutely necessary. By simplifying the acquisition process, DoD hopes to realize substantial savings while maintaining the high quality of its systems.

The Department also needs to draw on a broad national industrial base composed of commercial companies, dual-use technology companies, and defense-unique companies. This is critical, because DoD can no longer afford to rely solely on a large defense-unique industrial base for two reasons. First, it is uneconomical, both for DoD and for its suppliers. Because of the cut of about two-thirds in the procurement budget from its peak in the 1980s, DoD spending alone will not support a large defense-unique industrial base. Second, although in the past the defense sector produced the most critical technologies, today many of the technologies the Department is most interested in -- computers, software, communication -- are being driven by commercial, not defense, developments. By helping to merge the defense and commercial industrial bases, DoD will be able to acquire state-of-the-art technology, which will keep U.S. forces the most technologically advanced in the world, at an affordable cost.

REFORMULATING POLICIES FOR THE USE OR THREAT OF USE OF MILITARY POWER

U.S. interests stem from historical ties throughout the world and the importance of the international economy to domestic prosperity. In contrast to World War II and the Cold War, most of the current and foreseeable threats to these interests do not threaten the survival of the United States. The problems, though, are complex and difficult. One of the principal challenges is to know when and how to use military force and military forces in this new security environment, when the threats involve interests short of national survival.

It has become increasingly clear that the post-Cold War world will present the United States and the other market democracies with many more cases for possible military engagement than their resources can support. As 1994 began, there were conflicts of a significant scale in over a dozen countries; U.N.-sponsored peace operations were active in 17 different countries. The United States and the international community have a growing stake in peace among and within nations throughout the world. At the same time, resources are limited, and military intervention is not the best or even an effective way to resolve many conflicts. Hence, the United States must exercise great care in using military forces as instruments of national policy.

Hierarchy of Interests

There are three basic categories of cases in which the United States may use its armed forces. The first involves cases in which U.S. vital interests are threatened. The second involves cases in which the United States has important, but not vital, national interests at stake. The third involves cases of strictly humanitarian concern.

An interest is vital if it involves the survival of the United States or key allies and friends, if it involves critical U.S. economic interests, or if it involves the danger of a future nuclear threat to the United States or its allies. If the United States determines that it faces a threat to a vital interest, it must be prepared to use military force to deter or end that threat. It also requires taking action as a hedge against future threats to U.S. vital interests.

For example, in October 1994, Iraq tested the U.S. resolve to defend vital interests when it threatened Kuwait and northern Saudi Arabia by massing troops on Kuwait's border. The rapid reinforcement of U.S. air, naval, and land forces in the region, as part of Operation Vigilant Warrior, gave America the capability to deter aggression before it began. By backing words with military power, the United States reassured its allies and friends that it takes such threats seriously.

This does not mean that a threat to U.S. vital interests immediately requires a full military response. On the Korean Peninsula, North Korea's pursuit of a nuclear weapons program, coupled with its forward-deployed million-man army, created a dangerous situation that threatened U.S. vital interests. The United States pursued active diplomatic efforts to resolve this issue. At the same time, the Administration was prepared to seek international economic sanctions against North Korea and augmented allied defenses in the Republic of Korea. Faced with a resolute international community, North Korea fortunately committed to halt and eventually dismantle its dangerous nuclear program.

The second category includes cases in which important, but not vital, U.S. interests are threatened. In these cases, decisionmakers must consider the use of some level of force commensurate with the interests at stake. Options range from using U.S. military assets for logistical operations to employing U.S. combat forces. In these situations, military forces should only be used where they are likely to accomplish the objectives set for them, and where the costs and risks of military engagement are commensurate with the interests at stake. Generally, the United States will have the option of participating in such operations as part of a multinational effort. Multilateral operations, including peace operations, are an important component of U.S. strategy and, when used selectively and effectively, can protect and advance U.S. interests. They offer the United States a way of sharing costs in operations which address threats to U.S. national security. However, America must always maintain the ability to act alone.

In Haiti, for example, the United States was prepared to use force against the illegal military regime because it threatened U.S. interests in protecting democracy in this hemisphere, preventing a desperate new wave of refugees, and halting a cruel, systematic reign of terror over the Haitian people. Initially, diplomacy was tried. After exhausting all other alternatives, the United States and its allies threatened to use force to remove the military regime from power. In this case, the threat turned out to be sufficient to convince the military regime to step down, permitting the democratic government to return to power.

In Bosnia, unlike Haiti, it would take more force than is justified by U.S. interests to try to impose a comprehensive peace settlement. That is not to say that no U.S. interests are involved; the United States has an interest in preventing the war and its consequences from spreading beyond Bosnia. The United States and the international community generally share an interest in preventing large-scale and serious abuses of human rights, such as those perpetrated repeatedly in Bosnia since 1991. Further, the United

States has humanitarian interests in trying to limit the violence and relieve suffering while the international community seeks to broker a peace settlement. These are real interests, but they are also limited interests. In Bosnia, U.S. actions have been and must remain proportional to these interests, taking into account the potential costs and risks of other alternatives.

Bosnia is also an example of selectively using military power for limited objectives. To help keep the conflict from spreading, a small U.S. Army infantry unit is deployed in Macedonia as part of a U.N. peacekeeping force. In addition, U.S. forces are participating in NATO efforts to limit the violence and casualties while diplomatic efforts to reach a settlement continue.

The final category of cases involves humanitarian concerns. Here the question involves use of military forces, rather than military force. Generally, the military is not the best tool to address long-term humanitarian concerns. The U.S. government has ongoing, established programs to assist international and nongovernmental agencies in providing humanitarian relief to populations in need. The Defense Department's focus will remain on its warfighting missions rather than on humanitarian operations.

But under the following conditions, the use of armed forces to provide humanitarian assistance is appropriate:

- A natural or manmade catastrophe dwarfs the ability of the normal relief agencies to respond.
- The need for relief is urgent and only the military has the ability to respond quickly enough.
- The response requires resources unique to the military.
- The U.S. mission is narrowly defined with minimal risk to American troops.

Rwanda is the most recent example of how military forces can be used to help relieve a humanitarian crisis. Clearly, this crisis was outstripping the ability of civilian relief organizations to respond. Consequently, DoD brought its unique capabilities, such as airlift and water purification, to bear on the crisis, and those forces made a difference -- they saved tens of thousands of lives. Once the immediate crisis was under control, U.S. forces turned relief efforts over to civilian agencies and withdrew.

Criteria for the Use of Force

After evaluating the interests at stake and the costs of the operation, the Administration will consider many specific factors before deciding whether to commit forces, what objectives to assign to them, and what level of forces to employ. Prominent among these factors are:

- Existing treaty commitments.
- The willingness and ability of like-minded nations, particularly those most directly affected by the conflict, to contribute to the operation.
- Whether, in the absence of coalition partners, U.S. unilateral action is justified.
- Clear military objectives supporting political objectives.
- Judgments about the necessary duration and costs of the operation. In other words, can it be achieved in a reasonable amount of time with an acceptable expenditure of resources and concluded in an acceptable manner.
- The willingness to commit sufficient forces to achieve the defined objectives.
- The extent to which support for U.S. involvement exists among Congress and the American people, and the extent to which such support can be marshaled.
- The acceptability, in the case of multilateral operations, of proposed arrangements for command and control of U.S. forces.

The relationship among the size, composition, and disposition of forces committed and U.S. objectives must be continually reassessed and, if necessary, adjusted.

CONCLUSION

As a global power with global interests, the United States has not only the opportunity, but also the responsibility, to help ensure a safer world for generations of Americans. As President Clinton has said, "As the world's greatest power, we have an obligation to lead and, at times when our interests and our values are sufficiently at stake, to act."

The Department of Defense is doing its part to seize this opportunity. As the Department completes the transition to a post-Cold War military force structure, it has undertaken a number of programs and initiatives to ensure this force is well-trained, ready, and able to deter or respond quickly to a range of potential new threats and opportunities.

The world has changed dramatically over the past few years, but one thing remains constant -- a strong military force, comprised of the best men and women society has to offer, is the nation's best insurance policy. Each and every element of the defense program is built around and supports this fundamental priority.

ROLES OF MILITARY POWER IN U.S. DEFENSE STRATEGY

INTRODUCTION

As stated in the National Security Strategy, the Bottom-Up Review, and the National Military Strategy, the Department of Defense will field and sustain the military capabilities needed to protect America and advance its interests. The United States is the only nation capable of unilaterally conducting large-scale, effective military operations far beyond its borders. There is and will continue to be a great demand for U.S. forces, not only to protect the United States from direct threats and to help maintain peace and stability in regions critical to U.S. interests, but also to help support multinational efforts to bring peace to regions torn by ethnic, tribal, or religious conflicts and to ameliorate human suffering.

MILITARY MISSIONS

Supporting the Administration's strategy of engagement requires that the United States maintain robust and versatile military forces that can accomplish a variety of missions, as delineated in the Bottom-Up Review:

- U.S. forces must be able to offset the military power of regional states with interests opposed to those of the United States and its allies. To do this, the United States must be able to credibly deter and, if required, decisively defeat aggression, in concert with regional allies, by projecting and sustaining U.S. power in two nearly simultaneous major regional conflicts (MRCs).
- U.S. forces must be forward deployed or stationed in key overseas regions in peacetime to deter aggression, demonstrate U.S. commitment to allies and friends, underwrite regional stability, gain familiarity with overseas operating environments, promote joint and combined training among friendly forces, and provide initial capabilities for timely response to crises.
- The United States must be prepared for a wide range of contingency operations in support of U.S. interests. These operations include, among others, smaller-scale combat operations, multilateral peace operations, noncombatant evacuations, and humanitarian and disaster relief operations.
- While the United States is redoubling efforts to prevent the proliferation of weapons of mass destruction (WMD) and associated delivery systems, it must at the same time improve its military capabilities to deter and prevent the effective use of these weapons, to defend against them, and to fight more effectively in an environment in which such weapons have been used.
- Finally, to meet all of these requirements successfully, U.S. forces must be capable of responding quickly and operating effectively. That is, they must be ready to fight. This demands highly qualified and motivated people; modern, well-maintained equipment; realistic training; strategic mobility; and sufficient support and sustainment capabilities.

DETERRING AND DEFEATING AGGRESSION

The focus of U.S. planning for major theater conflict is on the need to be able to project power and to deter, defend against, and defeat aggression by potentially hostile regional powers. Today, such states are capable of fielding sizable military forces that can cause serious imbalances in military power within regions important to the United States, with allied or friendly states often finding it difficult to match the power of a potentially aggressive neighbor. Such states may also possess WMD. Hence, to deter aggression, to prevent coercion of allied or friendly governments and, ultimately, to defeat aggression should it occur, the United States must prepare its forces to assist its friends and allies in confronting this scale of threat.

The planning for fighting and winning these MRCs envisages an operational strategy that, in general, unfolds in the following ways:

- Halt the invasion.
- Build up U.S. and allied/coalition combat power in the theater while reducing the enemy's.
- Decisively defeat the enemy.
- Provide for post-war stability.

The United States will never know with certainty how an enemy will fight and how U.S. forces will perform in future conflicts. Moreover, the contributions of allies to the coalition's overall capabilities will vary from place to place and over time. Thus, balanced U.S. forces are needed in order to provide a wide range of complementary capabilities and to cope with the unpredictable and unexpected.

U.S. military strategy calls for the capability, in concert with regional allies, to fight and decisively win two MRCs that occur nearly simultaneously. As a nation with global interests, it is important that the United States maintains forces with aggregate capabilities on this scale. Obviously, the United States seeks to avoid a situation in which an aggressor in one region might be tempted to take advantage when U.S. forces are heavily committed elsewhere. More fundamentally, maintaining a two MRC force helps ensure that the United States will have sufficient military capabilities to deter or defeat aggression by a coalition of hostile powers or by a larger, more capable adversary than is foreseen today.

U.S. forces fighting alongside their allies are capable of fighting and winning two nearly simultaneous MRCs today. With programmed enhancements to U.S. mobility/prepositioning assets, as well as improvements to surveillance assets, accelerated acquisition of more effective munitions, and other key improvements, U.S. military forces will retain and improve upon this capability.

STABILITY THROUGH OVERSEAS PRESENCE

The need to deploy or to station U.S. military forces abroad in peacetime is also an important factor in determining its overall force structure. U.S. forces permanently stationed and rotationally or periodically deployed overseas serve a broad range of U.S. interests. Specifically, these forces:

- Help to deter aggression, adventurism, and coercion against U.S. allies and friends and interests in critical regions.
- Improve the U.S. ability to respond quickly and effectively in crises.
- Increase the likelihood that U.S. forces will have access to the facilities they need in theater and enroute.
- Improve the ability of U.S. forces to operate effectively with the forces of other nations.
- Underwrite regional stability by dampening pressures for competition among regional powers and by encouraging the development of democratic institutions and civilian control of the military in a constitutional democracy.

Through foreign military interaction, which includes training programs, combined exercises, military-to-military contacts, and security assistance programs that include judicious foreign military sales, the United States can strengthen the local self-defense capabilities of its friends and allies. Through active participation in regional security dialogues, the United States can reduce regional tensions, increase transparency, and improve its bilateral and multilateral cooperation. (See Appendix J, Military Assistance.)

The importance of overseas presence forces was demonstrated in October 1994 when Iraqi Republican Guard divisions began significant movements toward the border with Kuwait. Forward-deployed U.S. forces, some of which were participating in Operation Southern Watch, combined with the timely arrival of additional air, naval, and land forces which fell in on a recently prepositioned equipment set, provided a credible deterrent to the threat of Iraqi aggression.

By improving the defense capabilities of its friends and demonstrating its commitment to defend common interests, U.S. forces abroad enhance deterrence and raise the odds that U.S. forces will find a relatively favorable situation should a conflict arise.

CONTINGENCY OPERATIONS

U.S. defense strategy also requires that military forces be prepared for a wide range of contingency operations in support of U.S. interests. Contingency operations are military operations that go beyond the routine deployment or stationing of U.S. forces abroad but fall short of large-scale theater warfare. These operations are an important component of U.S. strategy and, when used selectively and effectively, can protect and advance U.S. interests. In 1994, such contingency operations ranged from Operation Vigilant Warrior to humanitarian operations in Rwanda.

The United States will always retain the capability to intervene unilaterally when its interests are threatened. The United States will also advance its interests and fulfill its leadership responsibilities by providing military forces to coalition operations, some of which may support U.N. Security Council Resolutions. For instance, in September and October 1994, the United States deployed approximately 20,000 troops to Haiti as part of a multilateral effort (Operation Uphold Democracy) to reinstate the democratically elected president and government of Haiti and provide a secure and stable environment for the return of functional governance. In addition, the United States will also continue to participate in multinational peace operations, authorized by the United Nations, as a cost-effective tool for preserving and restoring peace and stability in key regions. In such cases, the United States invokes the authority and support of the international community and benefits from sharing the military and financial burden with others.

Smaller-Scale Combat Operations

The United States will maintain the capability to conduct smaller-scale combat operations unilaterally, or in concert with others, when important U.S. interests are at stake. These operations generally are undertaken to provide for regional stability (Grenada), promote democracy (Panama), or otherwise respond to conflicts that affect U.S. interests.

Peace Operations

Peace operations include operations ranging from traditional peacekeeping to peace enforcement. Peacekeeping involves military or paramilitary operations that are undertaken with the consent of all major belligerent parties and are primarily designed to monitor and facilitate implementation of an existing truce agreement and support diplomatic efforts to reach a long-term political settlement. Peace enforcement is the application of military force or the threat of its use to compel compliance with generally accepted international norms, resolutions, or sanctions. The purpose of peace enforcement is to maintain or restore peace and support diplomatic efforts to reach a long-term political settlement.

These operations are usually authorized by the U.N. Security Council. They may be conducted by the United Nations, as in the case of most traditional peacekeeping operations, by a multinational coalition

led by a member state or alliance, or by a regional organization. For example, the U.S. Army maintains close to 1,000 troops in the Multinational Force and Observers in the Sinai to monitor the peace agreement reached between Israel and Egypt, and countries in western Africa have organized to field a peacekeeping force in Liberia.

The United States has an interest in supporting many U.N. peace operations, but it is far from alone in these efforts. In fact, of the more than 70,000 personnel serving in U.N. blue-helmeted peace operations, under 2 percent were American. The United States pays 30.4 percent of the annual cost of U.N. peace operations; beginning in October, the United States will pay only 25 percent. The cost, in manpower and money, to protect America's interests around the world without the burdensharing the United Nations offers could be much greater.

Members of the U.S. armed forces have been involved in U.N. peacekeeping missions since 1948. In 1994, significant U.S. military participation in U.N. blue-helmeted operations was limited to two of 17 missions: the former Yugoslavia (UNPROFOR) primarily in Croatia and the former Yugoslav Republic of Macedonia, and until March of 1994 in Somalia. At the end of 1994, 963 U.S. military personnel participated in U.N. peace operations.

Recent experiences in multilateral peace operations demonstrate that the United Nations, regional organizations, and member states have much to learn about how to conduct these types of operations effectively. The increasing size and complexity of peace operations, their evolution from traditional peacekeeping to peace enforcement, and the sheer number of operations currently underway severely challenge the current capabilities of the international community to respond effectively. With the certainty that U.S. and allied interests will continue to be challenged by conflict, DoD has taken steps to help establish more capable institutions and procedures to conduct peace operations.

For example, the Department is working with the United Nations to improve its peacekeeping capabilities; however, the United Nations currently lacks the ability to conduct large-scale peace enforcement operations that are likely to involve combat. Therefore, any large-scale participation of U.S. forces in such operations should be conducted under U.S. command and control, through competent regional organizations, such as NATO, or through ad hoc coalitions with acceptable command and control arrangements. Only after the threat of combat has significantly diminished will the United States consider placing its forces under the operational control of a U.N. commander. Even in these cases, command authority from the President to the lowest U.S. unit commander in the field will remain inviolate.

In addition, U.S. forces have made great strides toward enhancing their capabilities for these operations, especially in the areas of doctrine development and training. For example, a Joint Doctrine for Military Operations Other Than War, to include the full range of peace operations, is now being developed by the Joint Staff and expected to be published by the summer of 1995. It will provide guidance to all Services and combatant commands for the conduct of peace operations. In December 1994, the Army published Field Manual 100-23, Peace Operations, and the U.S. Army Infantry School is publishing a White Paper that addresses how brigades and battalions should conduct peace enforcement operations.

As peace operations doctrine has emerged, training also has focused more directly on peace operations. The first independent assessment of U.S. military training for peace operations was released by the DoD Inspector General in September 1994. It concluded that well-trained, disciplined combat soldiers and current combat planning, training, staffing, and decisionmaking processes are necessary preparation for peace operations. But it also noted that peace operations confront U.S. armed forces with requirements for specialized knowledge, skills, and attitudes and confirmed the need for certain special training to successfully conduct peace operations missions. Lessons learned from past operations, discussions with

other militaries, and information gained from joint exercises and peace operations training have given U.S. military forces a more detailed understanding of how better to tailor training for the requirements of peace operations.

Other Key Missions

U.S. military forces and assets will also be called upon to perform a wide range of other important missions as well. Some of these can be accomplished by conventional forces fielded primarily for theater operations. Often, however, these missions call for specialized units and capabilities.

HUMANITARIAN AND REFUGEE ASSISTANCE

U.S. military forces and assets are frequently called upon to provide assistance to victims of floods, storms, droughts, and other disasters. Both at home and abroad, U.S. forces provide emergency food, shelter, medical care, security, and demining assistance to those in need. During FY 1994, 60 countries benefited from DoD humanitarian assistance, which included four major humanitarian operations. These operations included:

- Rwanda. Humanitarian operations in support of Rwandan refugees included logistics, airfield management, and water purification. By the end of FY 1994, 1,250 airlift sorties moving over 15,500 tons of humanitarian assistance supplies had been completed.
- Former Yugoslavia. The United States completed over 1,800 sorties that landed nearly 29,500 tons of food and humanitarian assistance supplies in the former Yugoslavia. In addition, over 1,200 U.S. sorties airdropped nearly 11,500 tons of relief supplies in Bosnia and Croatia.
- Cuban and Haitian Migrants. Operations undertaken by the U.S. armed forces facilitated refugee and migrant processing, refugee camp construction, and camp management in response to the Haitian and Cuban migration emergencies.
- Northern Iraq Relief. DoD funds and oversees a relief program for the Kurds and other minorities of northern Iraq. For FY 1994, this program included the provision of more than 40,000 tons of food as well as heating fuel, medical supplies, and basic construction and agricultural materials.

COMBATING TERRORISM

As long as terrorist groups continue to target American citizens and interests, the United States will need specialized units available to defeat such groups. From time to time, the United States might also find it necessary to strike terrorists at their bases abroad or to attack assets valued by the governments that support them.

Countering terrorism effectively requires close day-to-day coordination among Executive Branch agencies. The Department of Defense will continue to cooperate closely with the Departments of State and Justice, including the Federal Bureau of Investigation, and the Central Intelligence Agency in an ongoing effort against international terrorists. Positive results will come from integration of intelligence, diplomatic and rule-of-law activities, and through close cooperation with other governments and international counterterrorist organizations.

The United States has made concerted efforts to punish and deter terrorists and those who support them. For example, on June 26, 1993, following a determination that Iraq had plotted an assassination attempt against President Bush, President Clinton ordered a cruise missile attack against the headquarters of Iraq's intelligence service in order to send a firm response and deter further threats.

NON-COMBATANT EVACUATION OPERATIONS

The United States government is also responsible for protecting the lives and safety of Americans abroad. To carry out this responsibility, selected U.S. military forces are trained and equipped to evacuate Americans from such situations as the outbreak of civil or international conflict and natural or manmade disasters. For example, U.S. forces evacuated Americans from Monrovia, Liberia, in August of l990, and from Mogadishu, Somalia, in December of that year. In l991, U.S. forces evacuated nearly 20,000 Americans from the Philippines over a three-week period following the eruption of Mount Pinatubo. During 1994, U.S. forces helped ensure the safe evacuation of U.S. citizens from ethnic fighting in Rwanda.

COUNTERDRUG OPERATIONS

The Department of Defense, in support of the Department of State, U.S. law enforcement agencies (LEAs), and cooperating foreign countries, continues to be an essential player in the nation's efforts to stem the flow of illegal drugs from abroad. The Department strives to achieve the objectives of the National Drug Control Strategy through the effective application of available resources consistent with its national values and legal framework.

The Department supports the counterdrug mission in five key areas:

- Support to source nations. DoD provides training, equipment, and operational support to source nation police and military counterdrug units to enable them to interdict and seize drugs and arrest drug traffickers.
- Dismantling cartels. DoD continues to enhance its support for the Drug Enforcement Administration's strategy to dismantle the cocaine cartels and the cocaine business.
- Detection and monitoring the transport of illegal drugs. DoD has designed a detection and monitoring capability covering the 2.5 million square mile transit zone stretching from South America to U.S. borders.
- Direct support to drug LEAs in the United States. DoD provides unique support through active, reserve, and Guard forces to drug LEAs in the United States in 10 categories -- to include transportation, maintenance, training, and intelligence.
- Demand reduction. The Department continues its internal programs of drug testing, education and training, and treatment, as well as community awareness and community outreach.

COMBATING THE SPREAD AND USE OF WMD

Beyond the five declared nuclear weapons states, at least 20 other nations have acquired or are attempting to acquire WMD -- nuclear, biological, or chemical weapons-- and the means to deliver them. In fact, in most areas where U.S. forces could potentially be engaged on a large scale, many of the most likely adversaries already possess chemical or biological weapons. Moreover, some of these same states appear determined to acquire nuclear weapons. Weapons of mass destruction in the hands of a hostile regional power could threaten not only U.S. lives and U.S. interests but also the viability of its regional power projection strategy.

The United States also continues to face potential nuclear dangers in the former Soviet Union. Notwithstanding the deterioration of its conventional military forces, Russia continues to maintain and to modernize (albeit at a much slower pace than the former Soviet Union) a large arsenal of strategic and theater nuclear weapons. Even after the Strategic Arms Reduction Treaty (START) II is ratified and comes into force, Russia will maintain a formidable strategic nuclear arsenal of up to 3,500 strategic

warheads. Moreover, thousands of strategic nuclear weapons from the former Soviet arsenal still lie outside of Russia, although the leaders of Ukraine, Kazakhstan, and Belarus have pledged to remove the strategic nuclear arsenals on their territories. There is also a danger that the materials, equipment, and know-how needed to make nuclear weapons could leak through porous former Soviet Union borders to other nations.

Addressing the threat of WMD proliferation is no small challenge. The United States requires a balanced, multitiered approach to counterproliferation, including:

- Deterrence. To deter effectively in this new era, the United States will need to continually assess the strategic personality of countries with these weapons to better understand their intent and what particular combination of declaratory policy, force posture, and other political and diplomatic signals can best dissuade proliferant states.
- Intelligence. Both overall threat assessment and timely intelligence and detection for battlefield operations and management.
- Ballistic and cruise missile defense systems, which can intercept missiles with a high degree of confidence and reliability, and prevent or limit contamination should the incoming missile be carrying a nuclear, biological, or chemical munition.
- Passive defenses to provide battlefield detection, decontamination, and individual and collective protection against chemical and biological warfare agents.
- Reassessment of U.S. approaches to power projection to minimize the vulnerability of U.S. forces to attacks by WMD.
- Improved abilities to detect and disarm weapons that may be brought covertly into the United States.
- Counterforce. Capabilities to seize, disable, or destroy WMD arsenals and their delivery means prior to their use.

With regard to nuclear weapons in the former Soviet Union, the United States will continue to press both for the elimination of all nuclear weapons and strategic offensive arms in Ukraine, Kazakhstan, and Belarus in accordance with START and the Nuclear Non-Proliferation Treaty and for full implementation of the START accords in Russia. Once START II is ratified, the United States and Russia have pledged to proceed to deactivate all strategic nuclear delivery systems to be reduced under this agreement. In addition, the United States will continue to provide assistance to Ukraine, Belarus, and Kazakhstan in the destruction of WMD and removal of all nuclear weapons from these countries; ensure the safe and secure storage of nuclear weapons and materials; and help prevent the proliferation of WMD, their components, related technology, and expertise within and beyond national borders. Overall, this approach calls for a strong relationship not only with Russia but also with the other successor states to the former Soviet Union.

Finally, the United States will retain strategic nuclear forces sufficient to deter any nuclear state, should it be hostile, and to convince it that seeking any advantage in nuclear weapons would be futile. This demands that the United States continue to maintain a nuclear force of sufficient size and capability to effectively hold at risk a broad range of assets valued by potentially hostile political and military leaders. This requirement is fully consistent with meeting its current arms control obligations.

CONCLUSION

These American military capabilities, coupled with the nation's unique position as the preferred security partner of important states in many regions, help to ensure that the U.S. government will remain an influential voice in affairs that affect its interests, be they political, economic, or military. America will, however, retain this prestigious position only if it maintains the military wherewithal to credibly underwrite those commitments.

BUILDING THE RIGHT SIZED FORCE

INTRODUCTION

DoD's blueprint for rightsizing the force was developed over the course of its seven-month Bottom-Up Review (BUR). The Review, which established the architecture for the Clinton Administration's long-term defense program, was a joint effort between civilian and military staffs in DoD. Task forces comprised of representatives drawn from elements throughout the Department -- including the Office of the Secretary of Defense (OSD), the Joint Staff, the unified commands, each of the Services and, where appropriate, other defense agencies -- reviewed major issues regarding defense strategy, forces, modernization programs, new defense initiatives, and management reforms.

The findings of the BUR were based on detailed assessments of U.S. interests in the international environment, future American security needs, including assessments of post-Cold War threats, and the mobility requirements, combat capabilities, and support needs associated with a range of prospective U.S. military operations. These analyses, some of which drew upon work already underway prior to the commencement of the Bottom-Up Review, encompassed large-scale quantitative studies of future warfare and conveyed to DoD's leadership the best judgments of military and civilian experts.

The Bottom-Up Review called for forces capable of meeting a wide range of challenges. The United States must field forces sufficient to conduct these operations. U.S. forces must be positioned forward or ready to deploy rapidly to distant regions and achieve their objectives quickly and decisively.

MAJOR REGIONAL CONFLICTS

The United States' strategy of engagement and enlargement requires forces which are able, in concert with regional allies, to fight and win two major regional conflicts (MRCs) which occur nearly simultaneously. This requirement, established in the Bottom-Up Review, remains the most significant factor in determining the overall size of its general purpose forces.

In contrast to the days of the Cold War, when the focus of military planning was on winning a large-scale war in Europe, the most likely scenarios today focus defense planning on fighting and winning regional conflicts on the scale of the 1991 Gulf War or a potential conflict in Korea. Because the timing and location of these regional conflicts are uncertain, the bulk of U.S. forces needed normally will not be in theater prior to the outbreak of conflict. Although in areas of high interests and high threat, some equipment is prepositioned and troops are forward deployed, most U.S. forces will deploy from their home bases. Therefore, U.S. defense planning must focus on ensuring that selected forces can quickly project power from the United States into regions important to its interests to defeat hostile regional powers.

Often in these MRCs, the United States will be fighting as the leader of a coalition, with allies and friends providing some support and combat forces. In fact, DoD assumes that regional allies will fight along with U.S. forces. It is also expected that other friends and allies from beyond the crisis area will contribute forces to any MRC. However, U.S. forces must be sized and structured to preserve the flexibility and the capability to act without them, if necessary.

Detailed analyses of possible future MRCs suggest that the following forces will be adequate to successfully fight and win a single MRC, assuming that DoD continues to make critical programmed enhancements to the capabilities of these forces and their supporting assets.

- 5 Army divisions.
- 10 Air Force fighter wing equivalents.
- Up to 100 Air Force heavy bombers.
- 4-5 Navy aircraft carrier battle groups.
- 1-2 Marine Expeditionary Forces.
- Special operations forces.

In the event of a conflict, of course, the U.S. response will depend on the nature and scale of the aggression and on circumstances in other parts of the world. If the initial defense failed to halt the invasion, or if U.S. decisionmakers decided to pursue more ambitious war objectives, additional forces could be committed.

OVERSEAS PRESENCE

The second broad class of military operations examined to determine the overall size and shape of U.S. general purpose forces was overseas presence operations. The United States will continue to maintain a robust overseas presence in several forms:

- Permanently stationed forces.
- Humanitarian demining.
- Periodic and temporary deployment of forces.
- Security assistance teams
- Combined exercises.
- Nation assistance.
- Port call and other force visits.
- Military-to-military contacts.
- Prepositioning of military equipment.
- Military attaches.

Stationing and deploying U.S. military forces overseas in peacetime remain essential elements of the United States' National Security Strategy and National Military Strategy. As noted above, the peacetime overseas presence of forces is the single most visible demonstration of America's commitment to defend U.S. and allied interests in key regions throughout the world. The presence of U.S. forces deters adventurism and coercion by potentially hostile states, reassures friends, enhances regional stability, and underwrites the larger strategy of engagement and enlargement. It also strengthens the U.S. role in the affairs of key regions.

Maintaining a sufficient level of U.S. military forces in Europe is essential to preserving U.S. influence and leadership, particularly its ability to help bring about a stable and democratic post-Cold War Europe. The United States must, therefore, preserve a visible and capable forward military presence to reassure both American allies in Western Europe and its new Partners for Peace in the East. President Clinton underscored U.S. resolve on this issue by pledging at the NATO Summit to maintain approximately 100,000 troops stationed in Europe, augmented by forward deployed naval forces in surrounding waters. In consultation with the Chairman of the Joint Chiefs of Staff and Commander in Chief, U.S. Europe Command, DoD determined that 109,000 is the actual number required at this time. This level of presence will be sufficient to respond to plausible crises and to provide tangible evidence of America's commitment to preserving regional stability. In addition, this force level will permit active participation in multinational training while minimizing the likelihood of having to deploy additional forces from the continental United States (CONUS) in the early stages of any emerging crisis. Such a force will also anchor both NATO's deterrent capability and the Alliance's ability to respond to out of area contingencies.

In the Asia-Pacific region, the United States is in an unparalleled position to be a stabilizing force in the multipolar regional balance that has followed the Cold War. Because the United States is a powerful but distant state, its forward deployed forces are seen around the region as a reassuring presence. Any significant diminution of the U.S. military presence in the Asia-Pacific region, in the absence of a corresponding reduction in potential threats there, would risk creating perceptions of a power vacuum. This, in turn, could touch off a regional arms race, threatening vital U.S. economic, political, and security interests.

The United States is thus committed to maintaining its current level of approximately 100,000 troops in Asia, almost all of whom are forward-stationed in Japan and Korea. These include an Army division consisting of two brigades and a wing of U.S. Air Force combat aircraft on the Korean Peninsula; and a Marine Expeditionary Force, an aircraft carrier, an amphibious squadron, and one and a half wings of

combat aircraft in Japan. This force visibly demonstrates the U.S. commitment to the region, deters aggression by potentially-hostile states, and allows for decisive U.S. action should deterrence fail.

In the Middle East and Southwest Asia, the U.S. response to Iraq's sudden deployment of Republican Guard divisions close to Kuwait in October 1994 showed a substantially improved ability to project U.S. military forces rapidly into the Persian Gulf region and have them ready to fight soon after their arrival. America's quick response was the result of several specific steps taken since the end of Operation Desert Storm:

- Prepositioning a heavy brigade set of equipment in Kuwait.
- Prepositioning a second heavy brigade set afloat on ships in the Indian and Pacific Oceans.
- Deployment of land-based aircraft in the Gulf region for Operation Southern Watch.
- The expanded series of combined exercises conducted with the militaries of the Gulf Cooperation Council (GCC) countries and other coalition partners.

These measures, combined with programs such as the squadron of Maritime Prepositioning Ships located in the Indian Ocean, gave U.S. forces the ability to respond quickly to the Iraqi threat. The close military-to-military relationships built up over many years with each of the GCC states created the environment that allowed host countries to accept the United States' crisis deployment promptly and support it effectively. DoD will continue to build on this solid base of cooperation by adding additional prepositioning, augmenting the number of land-based aircraft (including A-10 ground attack aircraft) deployed to the region, and further enhancing its program of training and exercises with the United States' security partners in the region.

U.S. interests in Latin America and the Caribbean are extensive and varied, and a strong U.S. defense capability is essential to the region's security. For example, the United States' trade with the countries of Latin America is growing faster than trade with any other region. The U.S. Southern Command (USSOUTHCOM) and the U.S. Atlantic Command (USACOM) serve as crisis reaction forces, partners in cooperative regional security, and symbols of the U.S. commitment to the security of the region. Potential missions for U.S. forces in the region include counterdrug operations, counterterrorism, noncombatant evacuation operations, foreign internal defense, peace operations, interdiction operations, and disaster relief.

The United States will continue to operate bases and facilities in the Republic of Panama until the year 2000. As the Secretary of Defense noted in his trip to Panama in June 1994, the two governments may discuss possible stationing of U.S. forces in Panama beyond that date. USACOM operates a base at Guantanamo, Cuba, which has proven valuable in handling migrant flows from Haiti and Cuba. U.S. forces at these bases are supplemented by those in CONUS.

U.S. security and economic interests in Africa are not as prominent as those in Europe, the Asia-Pacific, or the Western hemisphere, and the United States has no bases in the region. Yet in recent years, U.S. forces have been called upon to serve in large-scale peacekeeping and humanitarian missions in Somalia and Rwanda and to evacuate U.S. citizens from Liberia. With the continuing possibility of conflicts and humanitarian disasters in Africa, it is important that the United States help African states develop more effective capabilities for conflict resolution, peacekeeping, and humanitarian relief. DoD must, however, ensure that support of such efforts does not draw down the resources necessary for other high priority Defense Department missions.

Overseas presence needs can impose requirements for naval forces, especially aircraft carriers, that exceed those needed for MRCs alone. Therefore, programmed force levels for the Navy and the Marine Corps were developed based on their roles in overseas presence missions as well as MRCs.

CONTINGENCY OPERATIONS

The final set of operations for which DoD must size and shape its non-nuclear forces involves a variety of contingencies that are less demanding than an MRC but still require significant combat forces and capabilities. Such operations range from multilateral peace operations to unilateral intervention.

In some cases, U.S. involvement in these operations would be part of multinational efforts under the auspices of the United Nations or another international body. However, the United States will maintain the capability to act unilaterally when important U.S. interests are at stake.

Over the past decade, the United States has conducted more than 70 major contingency operations of the following types: peace operations, disaster relief, humanitarian assistance, noncombatant evacuation, maritime escort, counterterrorism, reprisal, deterrence of aggression, intervention to support democracy, sanctions enforcement, no-fly zone enforcement, migrant rescue and support, search and rescue, and deployments to quell domestic civil disturbances.

In 1994, such contingency operations included crisis response in Korea and the Gulf; humanitarian relief, peace operations, and sanctions enforcement in and around the former Yugoslavia; peace operations in Somalia; fighting forest fires in the western United States; enforcement of a no-fly zone over southern Iraq; humanitarian relief in northern Iraq and Rwanda; and migrant operations, sanctions enforcement, and operations to restore democracy in Haiti.

The forces for these operations will be provided largely by the same general purpose and special operations forces needed for the MRCs. This means that the United States will not be able to conduct sizable contingency operations at the same time it is fighting in two MRCs. While these operations do not impose requirements for additional forces beyond those needed for two MRCs, they may often require some specialized training and capabilities.

OVERALL FORCE SIZE AND STRUCTURE OF GENERAL PURPOSE FORCES

Based on the comprehensive assessment of U.S. defense needs in the Bottom-Up Review, DoD has determined that the force structure shown below, which will be reached by the end of the decade, can carry out America's strategy and meet its national security requirements.

Table III-1

Force Structure

	FY 1995	BUR-Based Plan FY 1999
Army		
Active Divisions	12	10
National Guard Divisions	8	5+[a]
Navy		
Aircraft Carriers[b]	11/1	11/1
Airwings(AC/RC)[b]	10/1	10/1
Attack Submarines	85	45-55
Ships	373	346
Air Force		
Active Fighter Wings	13	13
Reserve Fighter Wings	8	7
Marine Corps		
Active PersonnelEnd Strength	174,000	174,000
Reserve PersonnelEnd Strength	42,000	42,000

[a] Current plans call for 42 Brigades including 15 Enhanced Brigades.
[b] Dual entries in the table show data for active/reserve forces, except for carriers, which depicts deployable/reserve/training carriers.

If a major regional conflict erupts, the United States will deploy a substantial number of forces to the theater along with some overseas presence forces to quickly defeat the aggressor. If it is prudent to do so, limited U.S. forces may remain engaged in a smaller-scale operation like peacekeeping while the MRC is

ongoing. If not, U.S. forces will be withdrawn from peace operations in order to help constitute sufficient forces to deter and, if necessary, fight and win a second MRC. If a second MRC were to break out shortly after the first, U.S. forces would deploy rapidly to halt the invading force as quickly as possible. 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 and its allies had won both MRCs, U.S. forces would assume a more routine peacetime posture. As mentioned earlier, this force structure is not intended to support simultaneous U.S. involvement in MRCs while also sustaining active force involvement in any significant smaller-scale operations.

SIZING U.S. NUCLEAR FORCES

The Nuclear Posture Review, a 10-month effort which examined all aspects of the U.S. nuclear posture, made recommendations about the rightsizing of the U.S. nuclear force structure. These changes, discussed in detail in a later section, reflect the reduced role that nuclear weapons now play in U.S. security strategy, yet maintain a stable deterrent and protect, at affordable cost, options to increase U.S. nuclear capabilities should current positive trends in Russia or elsewhere reverse. U.S. strategic nuclear forces will be comprised of the following forces by the beginning of the next century:

- 14 Trident submarines, each carrying 24 Trident II submarine launched ballistic missiles.
- 3 wings of Minuteman III intercontinental range ballistic missiles (450-500) with single warheads.
- 66 B-52 bombers carrying air–launched cruise missiles.
- 20 B-2 bombers carrying gravity bombs.

CONCLUSION

This force structure will meet U.S. requirements for fighting and winning two nearly simultaneous MRCs. In peacetime, U.S. forces will conduct routine overseas presence operations and will sometimes be engaged in smaller-scale operations such as peace operations, as well as humanitarian assistance disaster relief activities.

ACHIEVING CRITICAL FORCE ENHANCEMENTS

INTRODUCTION

The force structure outlined previously is significantly smaller than the force that was necessary during the Cold War. Analysis has shown that this force will be capable of carrying out the ambitious strategy of engagement as long as DoD implements a series of critical force enhancements recommended in the Bottom-Up Review. These enhancements will improve the capabilities, flexibility, and lethality of U.S. general purpose forces. They are geared especially toward ensuring that U.S. forces will be able to bring a large amount of firepower to the conflict in its opening stages and quickly halt the aggression.

These enhancements fall into three broad categories:

- Improved effectiveness of early arriving forces.
- Strategic mobility enhancements.
- Improved Army reserve component readiness.

IMPROVED 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. A discussion of these enhancements follows.

Advanced Munitions and Sensors

The key to halting invading armies in theater warfare is to quickly damage or destroy large numbers of their armored vehicles. New technologies for smart munitions capable of accomplishing this task are maturing rapidly.

The CBU-97B/Sensor Fused Weapon (SFW), now in the early phases of production, is the first of the advanced antiarmor munitions. SFW is a dispenser-delivered, wide-area, all-weather munition that gives aircraft the capability to disable or destroy multiple armored vehicles in a single pass. The Air Force is already procuring SFW. The Navy is developing a version of the Joint Standoff Weapons (JSOW) equipped with the SFW submunition.

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 smart mines that should be difficult to neutralize. Based on the same design as SFW, WAM can be emplaced by either aircraft or missiles. Limited stocks of the WAM should be available in FY 1998.

The Brilliant Anti-Armor Submunition (BAT), 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. For example, the Joint Direct Attack Munition (JDAM) will allow aircraft to accurately deliver conventional bombs in all types of weather and battlefield conditions. Finally, the JSOW will enhance the survivability, standoff, and range of selected U.S. attack platforms. Similarly, the Enhanced Fiber Optic Guided Missile (EFOG-M) antiarmor system, currently in advanced technology development,

provides a significantly improved precision antiarmor capability to forces deployed on the ground. The EFOG-M will allow engagement and destruction of targets at longer ranges with increased precision. These systems should 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.

Battlefield Surveillance

Accurate information on the location and disposition of enemy forces is a prerequisite for effective military operations. Hence, current planning envisions the early deployment of reconnaissance and command and control aircraft and ground-based assets to enable U.S. forces to see the enemy and to pass information quickly through all echelons. Advances in areas ranging from satellite communication and surveillance to digitization will ensure that U.S. forces have a decisive advantage in tactical intelligence and communications.

New sensors that provide adverse weather surveillance of the battlefield at significantly increased depths and with wide-area platforms that provide continuous coverage are essential to its ability to bring force to bear effectively. Several such sensors and platforms are undergoing final stages of development testing and will be fielded in the next few years. Examples include the synthetic aperture and moving target indication radars on the E-8C Joint Surveillance Target Attack Radar System (JSTARS), and unmanned aerial vehicles (UAVs) in several endurance and range classes with various sensors.

Long-Range Bomber Enhancements

Heavy bombers can play unique and important roles in short-warning conflicts and bring massive firepower to bear during the opening hours and days of conflict. Programs are underway which will increase bomber survivability, sustainability, and precision weapons delivery capability. Once in place, the U.S. bomber force of B-1, B-2, and B-52Hs will be able to cover a full range of enemy targets. When armed with the advanced munitions listed above, the bomber force will be able to quickly and effectively destroy high-value targets and cut lines of communication in rear areas, and disrupt and destroy advancing enemy ground forces.

Enhanced Carrier-Based Airpower

The Navy is examining a number of innovative ways to improve the firepower aboard its aircraft carriers. First, the Navy will acquire stocks of new smart antiarmor weapons for delivery by attack aircraft. The Navy also will fly additional F/A-18s and crew members to forward-deployed aircraft carriers. These additional aircraft and crews would increase the striking power of the carriers during the critical early stages of a conflict.

STRATEGIC MOBILITY ENHANCEMENTS

The key to being able to prevail in even one MRC, much less two, is strategic lift capability. U.S. lift assets are the foundation of the force's capability to project combat power around the globe. Lift assets are also used in nearly every humanitarian and peace operation undertaken by U.S. forces. These unique lift capabilities will continue to make U.S. participation in many multilateral operations a key to their success. DoD is in the process of making substantial enhancements to U.S. strategic mobility -- most of which were first identified in the 1992 Mobility Requirements Study.

Strategic Airlift

The United States is replacing its aging C-141 fleet. Thirteen C-17 airlifters have already been delivered to their base in Charleston, and funding for six C-17s and procurement of long lead items for eight additional aircraft have been approved by Congress for FY 1995. Plans continue to complete the initial Air Force buy of 40 aircraft. Requirements exist for more than the capacity that these 40 will provide, and

they will be met either by additional purchases of C-17s or by the purchase of nondevelopmental airlift aircraft or both.

The C-17s at Charleston Air Force Base (AFB), South Carolina, have logged more than 1,200 flights and 5,900 hours, and over 8,000 landings. In October 1994, two C-17s flew the aircraft's first operational mission from Charleston to Langley AFB, Virginia, to pick up a load which included outsized vehicles that will fit only on C-17s and C-5s. They then flew direct to the Persian Gulf, with air refueling enroute, off loaded their cargo, and flew nonstop back to Charleston. These C-17s were officially declared operational at Charleston in January 1995 and are now available for worldwide operations.

The C-17 offers capabilities not available in commercial aircraft such as the ability to carry outsize loads, to conduct airdrop operations for both equipment and personnel, and enhanced ground maneuverability which improves throughput in both modern and austere airfields. Commercial cargo aircraft are less expensive, but they cannot carry outsize loads nor can they carry a significant portion of the military cargo that can be loaded on the C-141. Modifications to commercial aircraft, of course, can increase the proportion of military cargo that those aircraft can carry.

The Department is reviewing the cost, schedule, and production performance of the C-17 and is also conducting a competition for nondevelopmental airlift aircraft. The number of each aircraft that the Department will purchase will be decided later this year.

Strategic Sealift

DoD plans to acquire 19 large, medium speed roll-on/roll-off (LMSR) ships which will more than double surge sealift capacity for transporting forces and equipment from the United States to distant theaters and support the Army's prepositioning afloat program. Additionally, the United States will improve the readiness and responsiveness of the Ready Reserve Force (RRF) though a variety of enhancements.

Finally, DoD plans to fund various measures that together will improve the flow of personnel, equipment, and supplies from their locations in the United States to the ports from which they will embark. Some of these improvements include expanding rail and airheads at contingency force installations, constructing a containerized ammunition facility on the West Coast, and purchasing and prepositioning over 1,000 railcars for heavy/oversized cargoes.

Although not an enhancement per se, the U.N. Law of the Sea (LOS) Convention ensures navigation and overflight rights that are essential to the mobility of U.S. forces. This treaty guarantees that key sea and air lines of communication will remain open as a matter of legal right, not contingent upon approval by coastal and island states along the route or in the area of operations. For these reasons, DoD strongly supports the United States becoming a party to the LOS Convention. (Further details at Appendix H.)

Prepositioning

Prepositioning heavy combat equipment and supplies ashore and afloat can greatly reduce both the time required to deploy forces to distant regions and the number of airlift sorties devoted to moving such supplies. In October 1994, when Iraqi Republican Guard and other units moved toward Kuwait, U.S. prepositioned heavy brigade sets of equipment in Kuwait and afloat allowed U.S. forces to arrive quickly to contribute to the defense of Kuwait. Before these prepositioning efforts, only about a third of the U.S. ground forces that deployed or were scheduled to deploy in October would have been on station within the same time frame.

The three maritime prepositioning ship squadrons provide equipment for a Marine Expeditionary Brigade (equivalent) in Southwest Asia (SWA) and Northeast Asia, and potentially other regions as well. An additional prepositioning ship, as appropriated in FY 1995, will enhance the current capacity and capability of the maritime prepositioning force. The U.S. Army has established an armored brigade set of equipment afloat which is available to be sent to either SWA or Northeast Asia. Additionally, the Army has added two container ships in FY 1995 which carry 30 days of supply for early deploying units of the entire contingency corps. The Army has also prepositioned one brigade equipment set ashore in Kuwait and is beginning to establish a brigade set in South Korea. Efforts continue to create an additional set of prepositioned equipment in SWA.

IMPROVED ARMY RESERVE COMPONENT READINESS

The Department of Defense has undertaken several initiatives to improve the readiness and flexibility of Army National Guard combat units and other reserve component forces in order to make them more readily available for MRCs and other contingencies. Toward this end, 15 Army National Guard (ARNG) brigades have been 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 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 Army combat power that can be made available by reinforcing or augmenting deployed active divisions and corps.

CONCLUSION

These enhancements will substantially increase the capabilities U.S. forces will need for effective operations in the post-Cold War era. To a large extent, the ability of the United States to fight and win two nearly simultaneous major regional conflicts depends on the enhancements described above. DoD will continue to ensure that funding for these enhancements receives priority in budgetary considerations.

READINESS

INTRODUCTION

Readiness pervades almost all of the Department's activities. It is not just one of DoD's functions that can be independently managed like any other program. Readiness involves a complex range of diverse elements that, when viewed in the aggregate, depicts the force's capability to operate in a post-Cold War environment of instability and new security challenges.

DoD must be able to define, measure, assess, project, and manage readiness. Successfully accomplishing these functions involves a very complex set of interactive tasks which, in many cases, break new ground for the Department of Defense. The key is to identify those policy, budget, and operational levers that are integral to force readiness and can be used to maintain and manage readiness.

With this in mind, the Department has undertaken a broad range of initiatives -- policies, budget actions, organizational structures -- which, taken in total, represent an aggressive program to accomplish something the Department has never done before -- actively manage and report on the readiness of U.S. armed forces from a DoD-wide perspective. That this is being done during a historic reduction in forces makes it all the more challenging.

Readiness is the Department of Defense's number one priority. Thus it is committed to taking those steps necessary to ensure its forces are ready to execute their missions. This chapter lays out the concepts, initiatives, and programs the Department has developed to help achieve its readiness goals.

READY TO DO WHAT?

The Department's first priority is maintaining U.S. military forces ready to fight -- to execute the elements of the National Security Strategy and win the nation's wars. U.S. forces must be manned, equipped, and trained to deal with the dangers to U.S. national security, including response to major regional conflicts, overseas presence operations, and other key missions.

Forces for each of these functions must meet standards in terms of the:

- Time it takes to mobilize and deploy to a theater of operations.
- Military missions these forces must execute once engaged.
- Length of time these forces should remain engaged.

Forces ready to fight means an appropriate force structure, modernized equipment, maintenance and logistics support, and the requisite trained and motivated personnel.

TODAY'S FORCES ARE READY

To achieve its number one priority, DoD leadership has focused attention on the lessons learned from hollow periods of the 1970s and early 1980s and has taken deliberate steps to prevent a recurrence. Previous incidences of hollowness were reflected in a force that was, on average, less educated, trained, equipped, sustained, or strategically mobile.

In contrast with the post-Vietnam drawdown and resulting hollow forces of the 1970s and early 1980s, today's forces are among the best ever fielded. The central reason is the quality of people that the military

recruits, trains, equips, and retains. Lessons learned from previous periods of hollowness are clearly reflected in the quality and capability of today's force. Moreover, the high readiness of the force continues as the Department completes its carefully managed drawdown from the Cold War levels of the late 1980s.

WHY READINESS IS NUMBER ONE

There are two compelling reasons to make readiness the first priority, even at the expense of other important uses for the Department's resources. First, the dramatically changed and dynamic international security environment has forced the United States to adjust its policies and programs for meeting evolving security challenges around the world. There is a complex array of new and old challenges that offers the United States new opportunities to exercise global leadership to enhance the security of its friends and neighbors and to promote democratic institutions of government.

As the only nation capable of deploying and conducting sustained large-scale operations beyond its borders, the United States is viewed as a valued regional security partner throughout the world. As such, the national security strategy of engagement incorporates the premise that the United States will be involved in a diverse range of operations other than war. United States national interests and resources will dictate the pace and extent of its military engagement abroad. As demonstrated recently in Korea, Haiti, and Southwest Asia, readiness is essential to fulfilling America's engaged foreign policy where threats can be deterred through rapid power projection.

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 wishes to diminish. A force not ready could lead the nation to suffer the consequences of defeat if it engaged a capable adversary.

Second, readiness is 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 the opportunity and challenge to perform tasks that they were trained to carry out. There is no greater frustration for those in any profession than assigning them important responsibilities and then denying them the tools and training needed to practice their trade. Challenging and rewarding opportunities attract and retain high quality personnel.

READINESS CHALLENGES

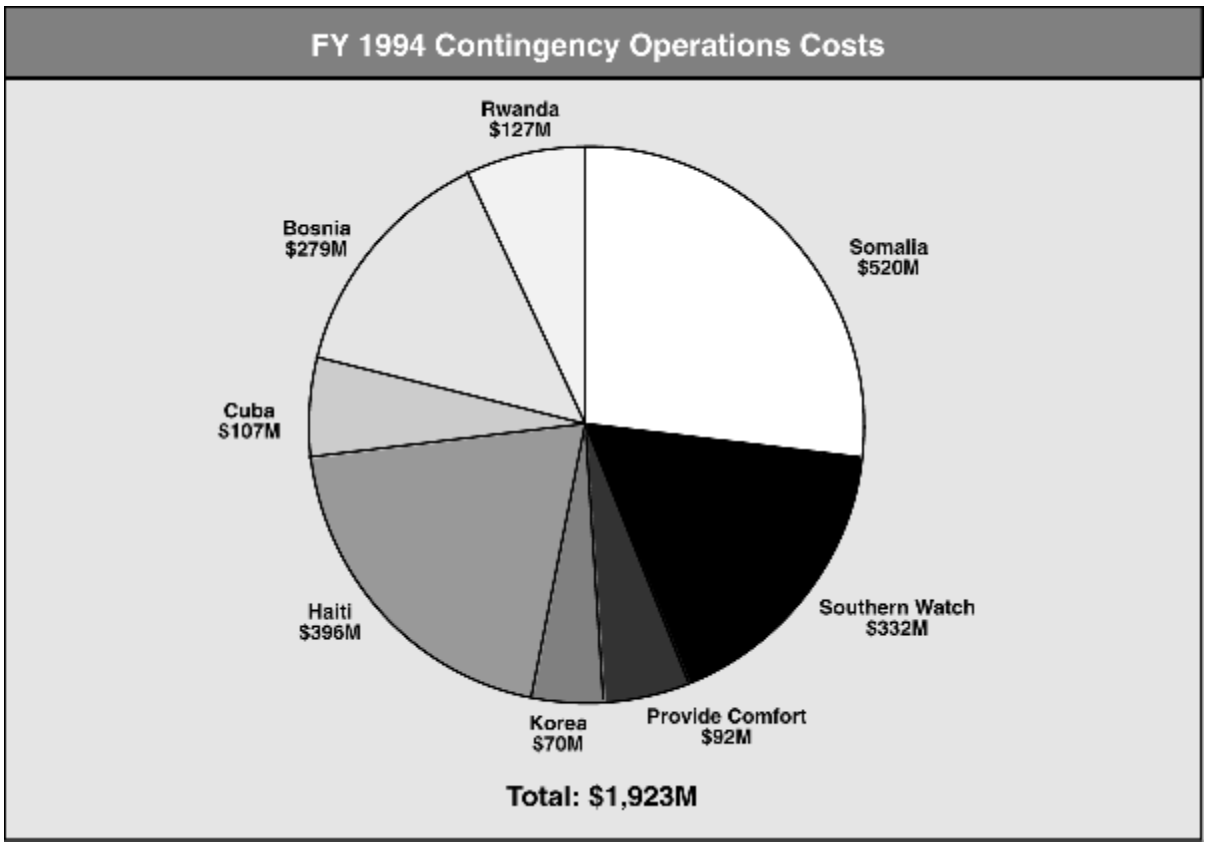
In today's political, fiscal, and operating environments, achieving and maintaining DoD readiness goals are a challenge. In the wake of the collapse of the Soviet Union, the United States is drawing down its forces and lowering its defense spending. In the past, however, as the United States drew its forces down, hollowness crept in. That is being prevented this time.

Challenges to maintaining readiness rest primarily with three variables: people, equipment, and training -- a deficit in any one will degrade readiness. It takes resources and time to develop and sustain ready forces. Readiness is cumulative over time; it takes 20 years to develop individual military leaders, 7 to 11 years to develop and field technologically superior equipment, and one to two years of sustained training to get units to their required readiness levels. Decay in resources and people would lengthen the amount of time it takes to rebuild readiness.

DoD has analyzed the challenges to the readiness of its post-drawdown forces in three dimensions: near-, medium-, and long-term. These challenges to readiness will determine how ready the force will be well into the 21st century.

NEAR-TERM CHALLENGES

During FY 1994, U.S. forces engaged in several operations not planned for in the budget. The conduct of these operations made important contributions to U.S. security and foreign policy. U.S. forces performed magnificently in all these operations, an unmistakable testimony to the high quality of U.S. personnel in uniform and the readiness of their units. As illustrated below, however, these operations entailed additional costs, totaling $1.9 billion, to the Department of Defense.



There were several factors associated with financing this amount for unplanned operations which led to a decline in readiness of some late-deploying units.

First, the funds provided for readiness in the FY 1994 budget had little margin to spare. As the year progressed, locality pay, retirement adjustments, and the like -- bills that must be paid -- chipped away at the margin.

Second, DoD entered FY 1994 with several ongoing engagements -- in Somalia, Bosnia, Southwest Asia -- that were not funded in its budgets. Then in late January 1994, the crisis triggered by North Korea's threats of nuclear proliferation led to increased deployments to that region. In March 1994, Congress approved supplemental appropriations that provided financial relief for some of these engagements. Nevertheless, the higher-than-usual activity of U.S. forces began to tax their readiness.

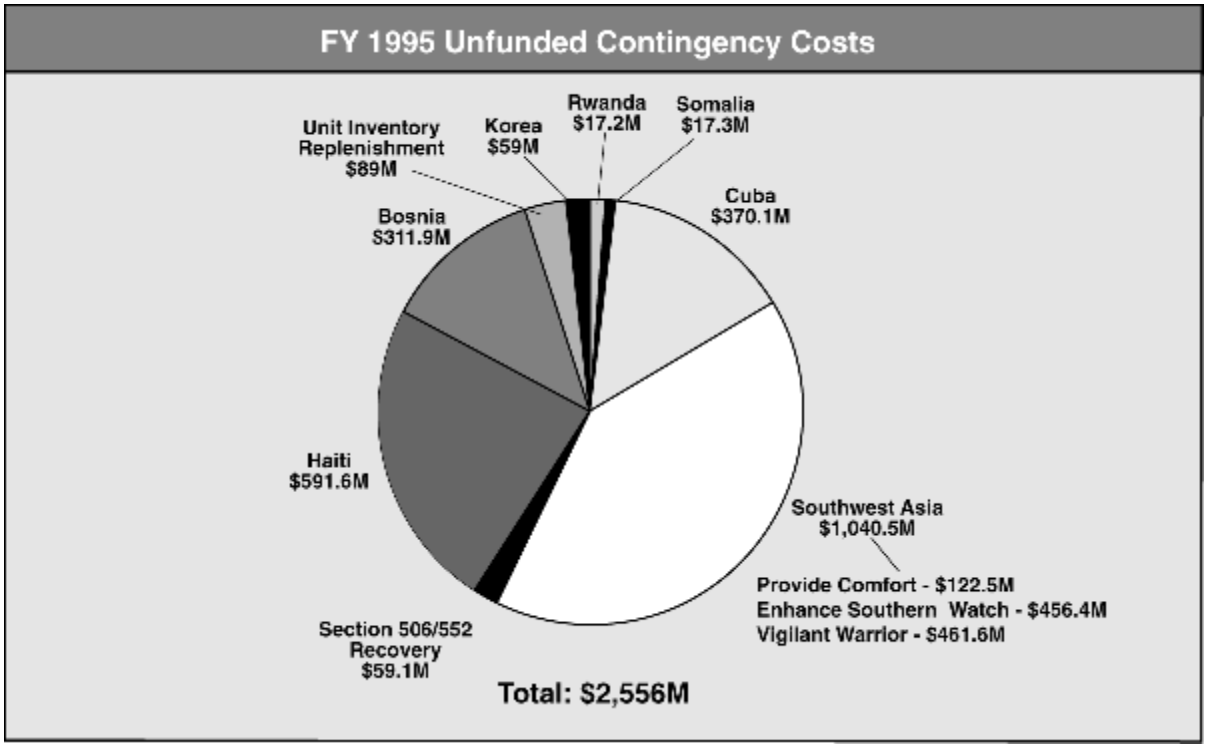
Third, the United States concluded FY 1994 with a series of new engagements -- Rwanda, Haiti, Cuba -- followed by deployments early in FY 1995 to deter and repel Iraq's maneuvers near the Kuwaiti border. DoD promptly requested reimbursement for these operations through supplemental appropriations and warned of the potential declines in readiness in light of these circumstances.

The basis for this warning was well founded. The increased activity levels of U.S. forces required additional funding, causing a cash flow deficit. The Department was forced to make up this deficit by cutting training, maintenance, and supplies from nondeployed units. DoD prudently targeted selected units to meet this requirement.

In November 1994, the Department's senior leadership learned that three Army reinforcing divisions reported changes in readiness to lower C-3 ratings (this rating is the unit's assessment of its ability to execute its wartime missions; C-1 is the highest rating, C-4 is the lowest). Several Navy and Marine air squadrons, that would deploy later in a crisis, reduced or curtailed training. In addition, Air Force units reduced stocks of spare parts.

The Response

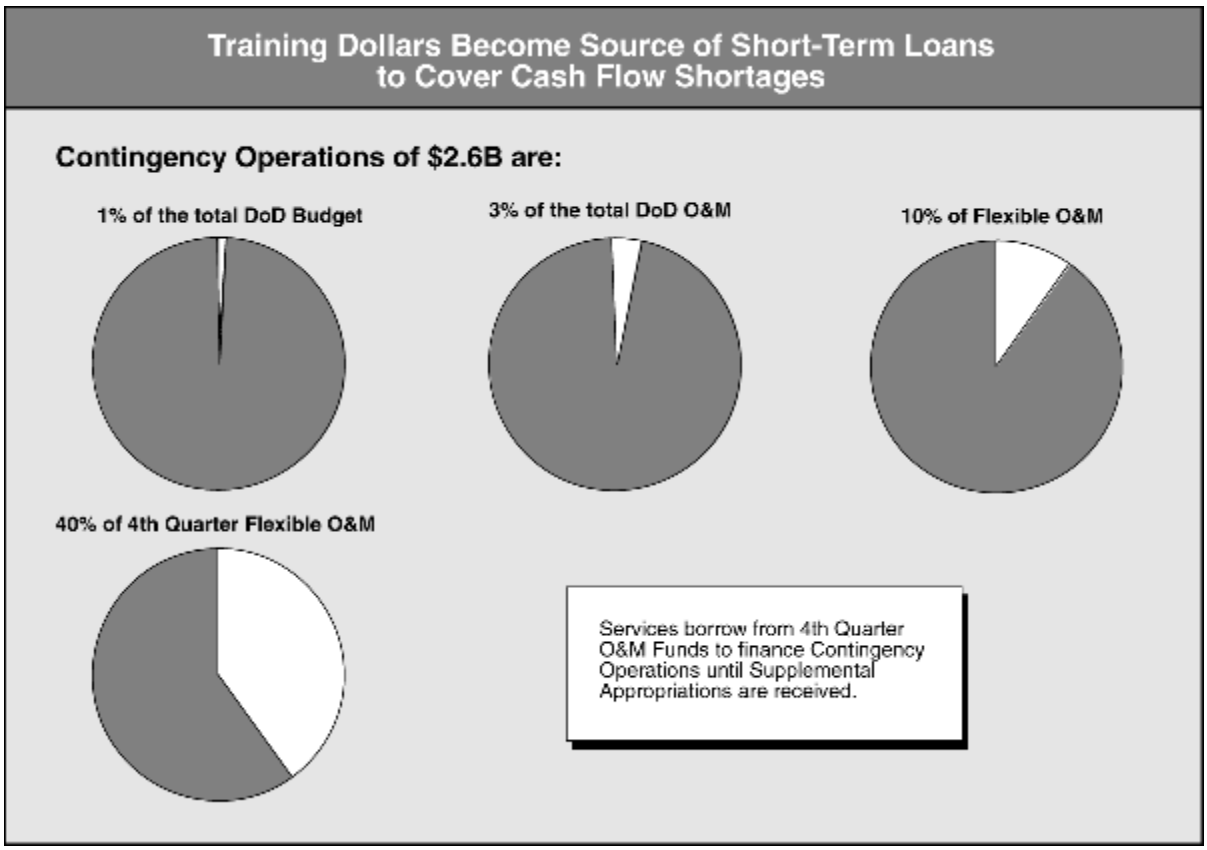
The Department's response was immediate and in two forms -- better financing and better processes. Since taking office, the President has taken steps needed for financial support of the readiness of U.S. forces. Three times he increased the funds available to the Department of Defense to ensure that his budget would sustain sufficient readiness, and three times he has requested supplemental appropriations to support readiness. DoD's response in adding money when needed demonstrates the Department's commitment to force readiness.



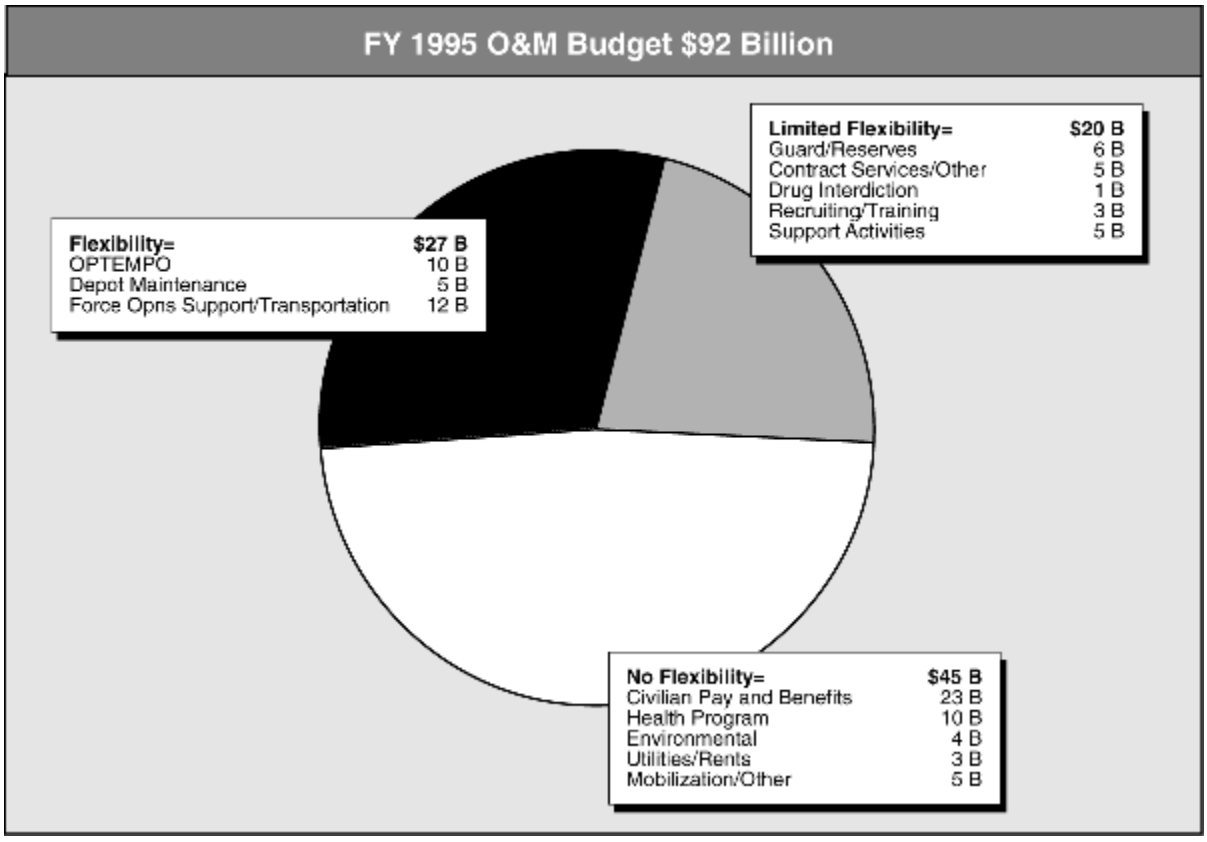
The Department anticipates incurring substantial costs for unplanned operations above funds appropriated for FY 1995. In conjunction with this FY 1996 budget request, therefore, the President submitted a supplemental appropriations request to finance these costs.

To place this action in perspective, a brief discussion of how readiness budget problems can arise is in order.

A review of contingency costs suggests funds to pay for operations would, at first glance, seem manageable. As the following chart shows, about 1 percent of the overall defense budget ($2.6 billion) is needed to pay such costs and would, therefore, seem to be absorbed easily. In reality though, this amount can be a very large portion of the funds actually available.



To begin with, financing unplanned operations must, by law, come from the Operation and Maintenance (O&M) account. The $2.6 billion is 3 percent of O&M funds -- a larger portion, but still an amount that could be accommodated. Within the O&M account, however, there are practical limits on flexibility to move money around. As the next chart indicates, there is no flexibility to use approximately half of the O&M funds to pay for unplanned operations. There also is only limited flexibility to use almost a quarter of the O&M budget. Of the O&M funds where there is flexibility, absorbing a $2.6 billion bill translates to a 10 percent reduction in available funding to support training and maintenance. The impact of diverting these funds is consequential since the loan of these funds degrades readiness. To minimize such impact, the Department borrows against fourth quarter activities in order to sustain readiness for as long as possible. However, if supplemental appropriations are not received by the end of the second quarter, when planning is well underway for fourth quarter training, activities in the fourth quarter will be seriously degraded.



Consequently, absorbing the full $2.6 billion for unplanned operations in the fourth quarter of FY 1995 could result in a reduction of readiness funds by 40 percent. Clearly such a drastic cut would have an unacceptable impact on unit readiness.

Supplemental budget requests alone, however, may not be sufficient. If, in pursuing security interests, DoD were to engage in unplanned operations beyond those now anticipated, and if they occurred in the later part of the fiscal year, unit readiness could still suffer. No matter how quickly the Department requested, and Congress approved, supplemental appropriations to cover these added expenses, short-term cash flow deficits would likely occur, to the detriment of readiness.

To avoid the impact of late supplementals and to minimize the damage from contingencies that could occur late in the fiscal year, the Department requested a new fiscal authority to preserve readiness. This authority would allow the Department to incur obligations, beyond existing appropriations, to preserve readiness. This Readiness Preservation Authority (RPA) would be applied only under the following limited conditions:

- It can be used only in the last two quarters of the fiscal year.
- It must be for essential readiness activities.
- Supplemental funds requested to cover costs incurred under this authority will be offset by a rescission unless the President determines that emergency conditions exist that preclude a rescission.

Having such authority would enable the military departments to continue training and other readiness programs that otherwise might have to be curtailed or canceled while waiting for supplemental

appropriations. With the addition of this new authority, DoD is confident that the cash flow problems which triggered a decline in readiness experienced late last fiscal year will not be repeated.

Beyond this fiscal year, DoD's military and civilian leaders believe that the FY 1996 budget will provide sufficiency for readiness. Again, however, this sufficiency rests on the timeliness of any supplemental appropriations needed to reimburse the expenses of unplanned operations.

In addition to improving the Department's financing, the Deputy Secretary directed that DoD's assessments of the current readiness of the force be candidly and promptly conveyed to the public and Congress. He directed the Vice Chairman of the Joint Chiefs of Staff to act as the Department's spokesperson on current readiness, giving a clear, unvarnished picture of the U.S. military's readiness so that there can be a fully informed discussion of any actions needed to correct problems that may arise.

MEDIUM-TERM CHALLENGES

Sustaining United States forces in the medium-term involves a focus on the most essential portion of the force -- the people. No weapon system is better than the people who operate and maintain it. Therefore, recruiting and retaining quality people significantly affect readiness. In recruiting, the Department is meeting its recruiting goals, posting the third-best recruiting year ever. In keeping people, DoD currently enjoys high retention rates among servicemembers. Moreover, the Department has taken several steps to improve quality of life (QOL) in the medium-term so that the Services can continue these positive trends.

QOL programs support readiness in three ways. First, they help to retain the best people -- well-trained people, people who are competent in their skills, and people who have high morale. Second, QOL programs enable people to go on deployment with the assurance that their families will be taken care of -- a particularly important factor with a more mature and family-oriented All-Volunteer Force. Third, quality of life helps the Department recruit good people. Addressing these important goals is reflected in the Secretary of Defense's initiative to add $2.7 billion over six years to directly improve the quality of life for its servicemembers. The $2.7 billion for these initiatives, which is in addition to money initially programmed in the budget, will improve compensation, living accommodations, and family and community support. The following Quality of Life chapter specifically details these enhancements.

LONG-TERM CHALLENGES

In part, meeting the near- and medium-term challenges will help bolster the force in the long-term. The primary focus of the long-term challenge is to provide technologically superior equipment to United States forces to improve their chances of success in future conflicts.

Additionally, the opportunities for meeting United States long-term goals lie in three areas: aggressive divestiture of infrastructure, effective acquisition reform, and creative reengineering of how the Department does its business. For instance, actions taken today to streamline the Department will prove a great benefit in the long-term. Some successful examples are BRAC 1995, civilian drawdowns, real property maintenance and depot maintenance enhancements, and widespread use of modeling and simulation to enhance training and acquisition.

MEETING THE CHALLENGES -- GUIDING PRINCIPLES

To have forces ready to fight and succeed in the climate of these challenges requires creating and implementing a new approach that breaks the readiness business-as-usual mold. DoD's approach to

meeting the challenge follows three guiding principles -- understand it, organize around it, and stay ahead of it.

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. On the face, 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 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 allocations 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 and definitions of readiness and readiness-related programs and increase its knowledge of how the allocation of funds will affect the 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 outputs of future readiness of forces.

For example, the Air Force has a model that projects mission-capable rates (the percentage of time that a weapon system is capable of performing at least one of its designed missions) for aircraft, based on spares funding levels. The Army is evaluating this model for possible adaptation for its helicopters and ground combat systems. Using the model, the Army determined that the best way to improve Black Hawk helicopter readiness was to increase maintenance personnel rather than increasing spare parts funding. Application of the model also showed that maintenance funds should be shifted from the M1A1 main battle tank to the Bradley armored troop carrier to balance better the readiness of both.

The Navy has developed two models to project mission-capable rates for aircraft and the material condition for surface ships. Both are multi-variable models, permitting the Navy to assess the impact on readiness of changes to factors such as force structure, spares and maintenance funding, and personnel manning. The Air Force is currently reviewing the analytic framework of the Navy's aviation model for possible inclusion into their model. These are important results, and they demonstrate the type of resources-to-readiness modeling the Department is attempting to develop for all readiness areas.

Organize Around It

Within the Department of Defense, the Services are responsible for the preparation of forces necessary for the effective prosecution of war and military operations other than war. The Services are responsible for recruiting, organizing, training, educating, and equipping mission-ready forces. The Chairman of the Joint Chiefs of Staff (CJCS), as the principal military advisor to the President, sets the strategic direction of the armed forces and, along with the Commanders in Chief (CINCs), is responsible for joint readiness as well as the ability to integrate, synchronize, and employ joint forces and support assets to execute assigned missions. The Office of the Secretary of Defense is charged with ensuring the development of the appropriate policies and allocation of resources needed for these military organizations to carry out their responsibilities.

In order to integrate the many functional areas and organizations that must pull together to support the Secretary's commitment to protecting force readiness, the Department has formed the Senior Readiness Oversight Council (SROC). This committee is chaired by the Deputy Secretary of Defense and includes the Vice Chairman of the Joint Chiefs of Staff (VCJCS), the Service Chiefs of Staff, as well as the Under Secretaries and selected Assistant Secretaries of Defense. The committee meets monthly, and most of its first year has focused on putting form to the program for carrying out the Secretary's readiness initiatives. For example, one of these initiatives was the development of a joint readiness reporting system, which was implemented in December 1994.

More recently, the SROC has focused on current and near-term future readiness. The events of last year suggested a need for senior leadership to follow closely the readiness health of the force today. In response, the Deputy Secretary of Defense directed the SROC to consider monthly current readiness reports by the VCJCS and the Chiefs of Staff of the Services. These reports form the basis for uncovering problems and correcting them before they can affect the overall readiness posture of the force.

The SROC is supported in its deliberations by the Readiness Working Group (RWG), which is co-chaired by the Deputy Under Secretary of Defense for Readiness and the Director of Operations (J-3) of the Joint Staff. The principal focus of this committee is to ensure that the directions of the SROC are carried out, although it serves as a useful forum to integrate readiness issues that do not require top-level management.

In addition, the CJCS approved the expansion in the focus of the Joint Requirements Oversight Council (JROC). The JROC is chaired by the VCJCS and includes the Service Vice Chiefs of Staff. It will now proactively consider readiness, sustainment, recapitalization, and integration issues and make recommendations to the CJCS and the Deputy Secretary. In the past, the JROC concerned itself solely with warfighting requirements issues.

In support of the JROC, the Joint Staff, as part of its Joint Warfighting Capability Assessment (JWCA) process, is coordinating an initiative that will include an assessment of current and future readiness. The JWCA process, which assesses nine joint force enablers (Strike; Air Superiority; Intelligence, Surveillance, and Reconnaissance; Overseas Presence; Command and Control (C^2) and Information Warfare; Deterrence/Counterproliferation; Strategic Mobility; Ground Maneuver; and Joint Readiness), will provide a systemic process for integrating individual capability assessments into an overall assessment of force readiness.

Finally, the new National Military Strategy of selective and flexible engagement, involving a broad range of activities to address and help shape the evolving strategic environment, requires increased emphasis on joint doctrine and education. Joint readiness to meet the challenges of a new era mandates an educated officer and civilian Department of Defense corps with an understanding of the current environment and a realistic but intellectually challenging vision of future military roles and capabilities. In the current strategic landscape, the Department of Defense must maintain a professional military education system that produces leaders to execute today's missions while simultaneously developing visionary Service, joint, and national strategies.

Stay Ahead of It

Along with sound understanding and solid organization, the Secretary of Defense also recognized that the Department continues to need advice on how to stay ahead of readiness. Thus he established the Defense Science Board (DSB) Task Force on Readiness, known as the Readiness Task Force (RTF), to provide him with advice, recommendations, and supporting rationale which address the following areas:

- Key indicators for measuring readiness and candidate methodologies for providing early warning of potential readiness problems, including assessment of:
    - How the Department deals with readiness concerns.
    - The adequacy of existing readiness reporting systems.
- Other matters affecting individual and collective readiness, such as structure, lift, sustainability, active-reserve mix, retention, training, and the use of civilians and coalition personnel support.

The RTF reviewed a broad range of readiness topics and looked in depth at numerous specific aspects of readiness. The June 1994 report of the RTF highlighted areas that they believe the Department of Defense should focus on to provide the ready forces needed, today and tomorrow, to respond to likely challenges in the changing world environment. The report also addressed its concerns in each of these areas and suggested approaches for dealing with them. The RTF will continue to meet quarterly, or at the call of the Secretary of Defense, to review the status of actions to implement its recommendations and/or address other readiness issues as directed.

Over the past year, in conducting its activities, the Readiness Task Force met as a group frequently, and its members visited numerous sites to gather information for its report. Significantly, the Secretary or Deputy Secretary of Defense met with the Task Force at many of their group meetings so that the department could take timely action, rather than wait for formal reports. In addition, the RTF met with the CJCS and the Service Chiefs as they developed observations and recommendations. They also maintained a dialogue with General Accounting Office representatives who conducted a congressionally-directed effort to define key military readiness factors. As a result of these collaborative efforts, steps to implement many of the recommendations made in the RTF report already are underway.

- Current status of military readiness. Although there are some downward indicators, the RTF found the general readiness posture of U.S. military forces to be acceptable at the time the report was written (June 1994). Many of the more recently identified readiness concerns are a direct result of turbulence associated with the drawdown in the force structure, complications associated with changes in strategy, changes in resource allocations stemming from budget reductions and unplanned contingency operations. The RTF expects such turbulence to subside as the Department adjusts to the new defense environment. Civilian and military leaders are concerned, however, that unless preventive or corrective actions are taken, continuing force reductions, strategy changes, budget reductions, and especially, unbudgeted contingency operations could cause serious readiness degradations.
- Current readiness reporting systems. Current readiness assessment systems, while having shortcomings addressed in the report, were designed to focus on levels of specific readiness resources (for example, personnel, equipment, training, supplies) that are critical to achieving readiness of units of each of the Services. Other systems provide general information identifying major shortfalls in resources that would inhibit responses to contingencies. This information, coupled with commanders' experienced judgments, provides a useful assessment of current unit readiness.
- Readiness Task Force focus. Taken in the aggregate, the RTF recommendations are being used as a basis for adjustments in the way the Department of Defense oversees and manages the readiness of its military forces. These adjustments will help the Department to:
    - Bring a greater joint force readiness perspective to the largely single-service unit perspective present today.
    - Develop ways to project the future readiness implications of U.S. policy and budgetary decisions, rather than waiting until such decisions have been implemented in order to determine whether the readiness of U.S. forces has been degraded.

- Develop better ways to link readiness concerns to U.S. policy development and resource allocation processes.
- Integrate the readiness oversight and management roles of the Office of the Secretary of Defense, the Office of the Chairman of Joint Chiefs of Staff, the CINCs, and the Services.

Citing an often-noted recommendation to bring a greater joint forces perspective to readiness, the CJCS established a Joint Warfighting Center (JWFC) to help develop and analyze joint force readiness policy, training, and doctrine. Reporting to the Chairman through the Joint Staff, the JWFC is helping the Joint Staff identify and evaluate joint readiness indicators that can be used as a basis for developing a joint readiness measurement system. The JWFC will also provide support to the CINCs and the Service Chiefs in planning and conducting joint force exercises.

The United States Atlantic Command (USACOM) established the Joint Training, Analysis, and Simulation Center (JTASC) to train Joint Task Force (JTF) battle staffs for continental United States (CONUS) forces. The JTASC's primary mission is to support and assist CINCUSACOM to develop, conduct, and assess full-scale JTF exercises and rehearsals using modeling, simulation, networked simulators, and other state-of-the-art technologies. When fully operational, the JTASC will improve and measure joint readiness, provide a laboratory for the improvement of joint tactics, and establish a secure CONUS joint environment for the demonstration of new technologies. These activities will be an important element in assessing and improving the readiness of JTFs.

In addition to these activities, and related to the RTF recommendations, the Joint Staff has developed a number of very specific directives and initiatives for assessing, improving, and monitoring readiness and the management of JTF operations. Among these are:

- Appointment of the VCJCS as the Joint Staff focal point for all readiness issues and assignment of Joint Staff focal points for specific readiness issues (for example, J-7 has the lead for training readiness).
- Development of joint readiness definitions and standards, as well as procedures for monitoring joint readiness and for integrating readiness considerations into the planning, programming, and budgeting system.
- Execution of major wargames to evaluate the adequacy of the Bottom-Up Review forces to conduct the two-MRC scenario.

Other joint initiatives are underway. A joint program office has been established to develop a common modeling and simulation architecture. This initiative, referred to as the Joint Simulation System (JSIMS), initially will address interoperability between the next generation of constructive simulations (wargaming) models, and over time, expand to address live (instrumented weapon/systems, people, and training centers) and virtual (weapon systems) simulators. All four Services have agreed to coordinate interoperability standards for instrumented training systems. In addition, DoD expects to increase the modeling and simulation capabilities embedded in C^2 systems so that the warfighters can train on their operational equipment in the way that they will fight.

SECRETARY OF DEFENSE'S THREE READINESS INITIATIVES

In the first SROC meeting, the Deputy Secretary of Defense directed three high priority readiness initiatives in order to improve the Department's management of readiness. These initiatives are:

- Analytical tools for relating resource inputs to readiness outputs. Of the three initiatives, relating resources to readiness has proven to be the most challenging. Some significant progress has been made in the logistics area, particularly in relating spares and maintenance funding to sortie generation rates for aircraft. As noted earlier, the Services have already developed some excellent models in this area, and have been building on these initial efforts.
- Use of simulations and advanced technologies. The Director, Defense Research and Engineering has recently published a draft Modeling and Simulation Master Plan to guide the development of future simulation efforts. That Plan is the subject on the SROC's agenda to refine the relationship between simulations and readiness. In joint wargaming there has been significant progress in linking above-corps-level training simulations of the individual Services. The recent European Command exercise Atlantic Resolve (formerly Reforger) demonstrated the ability to train the joint force commander and his staff using a distributed simulation which features full integration of ground, sea, and air battles.
- Joint readiness system. The CJCS has approved a joint readiness reporting system. It is based on the joint monthly readiness review (JMRR) conducted by the Vice Chairman of the Joint Chiefs of Staff with assistance from the Service Deputies for Operations (OPSDEPS). The system is to look at current unit and joint-force readiness, as well as projected readiness for the next 12 months. The Service OPSDEPS present the readiness of their Service's forces, and the Joint Staff Operations Directorate presents the readiness of the joint force. Joint force readiness is assessed against the enablers mentioned earlier in this chapter. The review includes an assessment of DoD's ability to execute the National Military Strategy, taking into account the level of force commitments at that time.

FY 1996-2001 PROGRAMS AND BUDGETS

Despite the challenges in precisely projecting U.S. readiness and sustainability needs in uncertain times, the readiness programs and budgets being submitted to Congress represent the best estimates possible based on the substantial knowledge and experience within DoD today, and they represent resources sufficient to keep U.S. military forces ready to fight and to execute U.S. policy successfully.

Future programs and budgets were developed using the direction provided through prior years planning. The principal guidance affecting readiness is outlined below:

- Readiness and sustainability remain the highest resource priority of the Department.
- Permit Service Chiefs to reallocate funds to preserve readiness.
- Readiness programming will reflect the first-to-fight principle.

  This requires components to maintain appropriate levels of manning; training; and equipment procurement, distribution, and maintenance (to include deploying units and their support) for the most demanding deployment schedules.

- Minimum readiness levels (SORTS) specified for all forces.
- Operating tempo (OPTEMPO) levels specified for all Services.
- Increased use of simulations, simulators, and advanced training devices and technologies to increase operational training effectiveness and efficiency for both active and reserve components; may reduce requirements for field training; and aid in the planning and programming processes.

ASSESSMENT OF READINESS FUNDING

The resources in the FY 1996 budget will provide sufficient readiness for America's armed forces, provided that:

- Congress and the public support the size and allocation of the resources recommended by the Administration.
- Congress supplements or replaces resources consumed by DoD in the conduct and execution of contingency missions in a timely fashion.

For the outyears of the program beyond FY 1996, DoD's focus is on maintaining adequate readiness, specifically, with an eye toward determining if those elements of readiness critical to the execution of U.S. defense strategy are sufficiently funded. For example, DoD has fully funded OPTEMPO and personnel programs. At the same time, the Department has attempted to maintain overall program balance to ensure, for example, that other programs (e.g., base operations, facilities maintenance) have sufficient funds and therefore will not undermine other critical readiness programs.

CONCLUSION

America's armed forces are the backbone of U.S. national security strategy, and they are ready today to carry out this strategy. To do so, they must prevail in several diverse missions: major regional conflicts, strategic nuclear deterrence, overseas presence, and smaller contingencies.

Accomplishments over the past year provide compelling evidence that the force is ready. Forces have deployed in a number of operations, often to shape particular situations so that future conflicts will be less likely. In each case, the United States' men and women in uniform performed magnificently. Their accomplishments are testimony to the payoff the nation receives for the investments of this and past administrations in their readiness.

Readiness remains the Department's first priority. Within this priority, the most essential component is people. The nation asks much of its men and women in uniform and owes much in return for their dedication and sacrifice. The quality of life initiatives, briefly discussed herein and highlighted in the next chapter, emphasize the Department's commitment to them.

For FY 1996 and beyond, the Department will maintain its forces as ready to carry out the strategy of the Bottom-Up Review. Still, more work needs to be done to implement proposed programs and budgets. The policies and programs enumerated in this section demonstrate the initiative and energy with which the Department is breaking new ground to address these challenges and will set the stage for ensuring readiness for the future. Thus, success down the road depends on fully funded future budgets, taking care of people, and conducting sufficient training to ensure that tomorrow's forces are ready to fight.

QUALITY OF LIFE

INTRODUCTION

People are the foundation of military readiness. Today's military mission is characterized by the use of sophisticated technology and an increased rate of deployment and family separation. These developments demand high quality, well–trained, and motivated servicemembers such as those who make up the force today. The Department of Defense must continue to attract young people of this caliber to military service, and must also retain them. Without a doubt, the most important thing that can be done to retain the present outstanding force is to offer a standard of living with fair compensation, healthy communities, and a reasonable work schedule. Investments in people are investments in the nation's security and its future. The Department must provide -- in exchange for the demands of a military lifestyle -- a decent quality of life.

QUALITY OF LIFE COMPONENTS

Military quality of life can be defined as those things which contribute to a servicemember's and their families' standard of living and their satisfaction with life in the military. Last summer, the Department conducted a comprehensive review of the programs which constitute quality of life. This review identified three general categories: Compensation and Benefits, Housing, and Community and Family Support.

As a result of this review, the Secretary of Defense identified specific areas within these categories which would make the most effective contribution toward strengthening the quality of life of military personnel and their families. The Secretary targeted the following areas for substantial improvement:

- Basic Pay.
- Bachelor Quarters.
- Basic Allowance for Quarters (BAQ).
- Child Care.
- Cost of Living Allowance (COLA) in the United States.
- Family Advocacy.
- Family Housing.
- Morale, Welfare, and Recreation.

To meet the disparity in pay for service personnel, DoD allocated $7.7 billion of the Department's FY 1996 budget to provide pay raises to military personnel at the full rate authorized by law through FY 1999. This is an unprecedented commitment and reflects the value the Department places on treating its people fairly.

In addition, the Department has obligated $2.7 billion over the next six years ($450 million per year through FY 2001) to fund the following quality of life initiatives.

Table IV-1

Quality of Life Initiatives

Compensation and Benefits	
New Living Allowance for High Cost Areas:	- Helps 30,000 servicemembers and families living in high cost areas. - Eliminates penalty of being assigned to high cost areas.
Increase Basic Allowance for Quarters:	- Benefits the 700,000 in off-base housing. - Reduces absorption of housing costs.
Housing	
Family Housing:	- Maintains 10,000 on-base homes that would otherwise close due to lack of maintenance.
Dormitory/Bachelor Quarters Improvements:	- Upgrades 5,000 bachelor quarter spaces (1,200 immediately).
Private-sector Housing Ventures:	- Allocates money for innovative housing approaches.
Community and Family Support	
Child Care:	- Increases capacity by 20% (38,000 spaces).
Family Advocacy:	- Increases resources for prevention and treatment of family violence.
Improved Morale, Welfare, and Recreation:	- Achieves $295 per capita comparability.

The Secretary recently established a Quality of Life Task Force of outside experts to follow up on these initiatives and to refine and strengthen them. The Task Force will provide recommendations for improving housing and the delivery of community and family services. The Task Force will also advise the Secretary on initiatives he can take to address the issue of personnel turbulence, as it relates to the quality of life of military personnel and their families.

The remainder of this chapter will discuss more broadly the programs which constitute quality of life, and address more specifically the initiatives outlined above.

COMPENSATION AND BENEFITS

The Department has long recognized the importance of compensation in sustaining a robust quality of life program. The military compensation package is made up of pay and nonpay benefits -- the components of a standard of living. In the area of pay benefits, the Department is taking three initiatives. Operating together, these three initiatives serve to stimulate retention which, in turn, contribute to the operational readiness of units and the welfare of those who serve and their families.

Pay

Unequivocally, healthy retention patterns generate seasoned leaders who are instrumental to unit performance and operational readiness. No single stimulus is stronger than pay in generating retention of top-quality people. Currently, military pay raises lag private sector pay raises by 12 percent as measured by the employment cost index (ECI). To limit the growth of the gap, the Department has funded the maximum pay raise authorized by law through FY 1999.

Improved Quarters Allowance

About 70 percent of military families reside in the local civilian community and receive housing allowances which are designed to cover, on the average, 85 percent of their housing costs. However, because of previous pay and funding gaps, military families today are reimbursed at about 80 percent of their housing cost. The Department will fund the first 1 percent of the housing allowance gap closure in

FY 1996 and plans to bring the reimbursement rate back to 85 percent incrementally over the next five years.

Cost of Living Allowance in the Continental United States

At present 30,000 military families are assigned to high costs areas in the continental United States (CONUS) in which payments for goods and services exceed 109 percent of the national average. These costs are in addition to housing expenses which are compensated under housing allowances. Assignments to areas such as Long Island, New York, or Los Angeles, California, place an undue financial burden on families. The National Defense Authorization Act of FY 1995 established CONUS COLA. This COLA program is designed to assist the military family residing in a high cost area. The Department plans to begin compensating families experiencing these high costs in July 1995. This increase will boost the average monthly pay by $40 and in some cases as much as $167 per family.

Health Care

A crucial part of the nonpay benefits package, and a key element of quality of life, is health care. Military medicine faces compelling challenges at this time of unprecedented change in the nation's health care system. One priority is medical readiness -- the need to be prepared wherever and whenever servicemembers are deployed, with the highest quality of care. Another equally important task is to supply accessible and excellent health care to the active duty force, family members, retirees, and other beneficiaries not currently involved in operations.

The Department's health care mission is not only complex, but also serves a large number of personnel. There are 8.3 million beneficiaries eligible to receive health care from the Military Health Services System (MHSS). Direct care is delivered worldwide in 133 hospitals and numerous clinics. Care is also purchased from the civilian sector through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) and TRICARE support contracts. The medical portion of the President's FY 1995 budget is approximately $15.3 billion, or 5.9 percent of the entire defense budget.

MEDICAL READINESS

Changing world politics and revised national security objectives present new challenges to military medicine. In a mission environment characterized by rapid deployment into volatile situations, military medical forces must continue to plan and train as rigorously as the fighting units. The Military Services are cooperating to establish new medical doctrine with an emphasis on countering the health threat, providing capability-based packages, ensuring vital in-theater care, and upholding absolute quality of care. Priority must go to forward presence and early deploying personnel where the greatest successes are insured with limited resources. Through such innovative measures, support for all of the armed services can be delivered in the optimum and yet most flexible way.

The frequency of humanitarian assistance and peacekeeping operations underscores the importance of efficient and flexible medical support units. In concert with United Nations' assistance needs, the United States provided medical teams and supplies in Somalia and established a medical treatment facility in Zagreb, Croatia. In addition, the Department has supported several operations around the world by furnishing both medical supplies and personnel; these missions include the Operation Provide Promise airlift over Bosnia, water relief in Rwanda, and the ongoing Operation Uphold Democracy in Haiti. Additionally, medical support provided as a part of security assistance programs continues to offer medical material and training to many nations. Although this support is a testimony to past readiness and flexibility, true medical readiness can only be ensured when personnel assigned to medical units plan, train, and deploy as a cohesive unit and as a component part of the fighting force for which they were designed.

HEALTH CARE INITIATIVES

In meeting the challenges of constrained budgets, force downsizing, and manpower reductions, the Department is implementing and executing management programs to improve the efficiency and quality of the MHSS and access to medical services for all those entitled to DoD health care.

TRICARE is the strategy that will transform the MHSS by bringing together the health care delivery systems of each Service and CHAMPUS; this cooperative and supportive effort will better assist patients and maximize the resources available to military medicine. The commanders of military medical centers located within different U.S. regions will develop an integrated plan for the delivery of health care, with a variety of options for eligible beneficiaries. TRICARE will continue to be evolutionary, addressing new difficulties and obstacles, as well as phasing in new methods and initiatives for improving the delivery of care to DoD health care beneficiaries.

In December 1994, the Department announced the new, uniform health benefit option for DoD health care beneficiaries under TRICARE. Called TRICARE Prime, it works like a private sector Health Maintenance Organization (HMO) and will enhance access to care and save money for both the patient and the Department. Families of active duty personnel who choose to enroll in TRICARE Prime will have no enrollment fees. In addition to TRICARE Prime, the TRICARE system will offer two other options to eligible beneficiaries: TRICARE Extra, which is a network of preferred health care providers; and TRICARE Standard, which is the same as the standard CHAMPUS program.

In addition to health care reform, the Department is strongly committed to dealing with specific issues such as any adverse health effects that may have resulted from service during Operation Desert Shield/Desert Storm. The Department is conducting an aggressive, comprehensive clinical diagnostic effort to determine, as far as possible, the causes of the symptoms in Persian Gulf veterans as described by the National Institutes of Health consensus conference. All Persian Gulf veterans are being offered an intensive examination; furthermore, a toll-free hotline was established in the summer of 1994 for servicemembers to call if they feel they might be experiencing medical problems as a result of their service in the Gulf.

Preliminary results from evaluations of the first 1,000 patients completing the Comprehensive Clinical Evaluation Program (CCEP) show that most (about 85 percent) have a definitive diagnosis/diagnoses that span a broad range of clinical entities for which they are receiving treatment and responding favorably. The Department expects to complete the majority of patient evaluations by late spring. For those remaining 15 percent who have less definitive diagnoses, the Department has established Special Care Centers (SCC) where patients will continue to be evaluated and treated. The Department has launched major research initiatives in the areas of reproductive health, interactive efforts of certain chemical compounds, leishmaniasis, and depleted uranium.

As female servicemembers continue to step into more diverse assignments, the Department is giving increased attention to women's health issues. In addition to traditional health care needs, the Department is identifying the medical implications of women in combat roles, what those assignments entail, and what the resulting health needs might be. With that information, the Department will implement actions to meet those requirements. In addition, the 1994 Health Care Survey of DoD Beneficiaries was designed to develop health risk assessments for female beneficiaries, focusing on the improvement of primary and preventive care for women.

The many challenges facing military medicine will require extensive involvement in problem solving, resource management, and program evaluation. The Department is addressing these issues through strategic vision, and an unswerving commitment to a healthy and efficient force.

Commissaries

Another important nonpay benefit is the commissary benefit. It supports a reasonable standard of living for people stationed both overseas and stateside. Overseas, military commissaries and exchanges are usually the only source of American products. Commissaries provide an income benefit through savings on purchases of food and household items for the military member and family. Surveys show that consumers average 20-25 percent savings when compared to commercial retail food stores; annual savings can range from a few hundred dollars to more than $1,500, depending on family size. This nonpay benefit is an integral part of the nonpay compensation package for active duty military, members of the reserve components, and military retirees. As of October 1994, there are 223 commissaries in the United States and 108 overseas.

Commissaries, and the savings offered, help offset a large portion of the economic stress military families experience. Overseas, American products also provide a constant and stabilizing feeling of home. They are an institution in military life, and serve as proof that the government understands the special needs of the personnel it values so highly.

Off-Duty Education

An important part of the nonpay military benefit, contributing to individual growth as well as the quality of military personnel, is off-duty, voluntary education. This program offers outstanding incentives to servicemembers who want to continue their education on their off-duty time, or increase their skills to become more competitive in their military career. In FY 1993, the Department made available $134 million in tuition assistance, which represented 75 percent of the cost of studies undertaken by servicemembers. Almost 40 percent of the force participated in college and university courses offered through the program. The following chart reflects the magnitude of participation in the voluntary education program during FY 1994. Off-duty, voluntary education meets the needs of motivated young people who gravitate towards careers that offer opportunities to advance and grow.

Table IV-2

Voluntary Education Program (FY 1994)

Programs	Number Enrolled	Degrees Earned	
High School/GED	1,300	High School/GED Diplomas	700
Undergraduate	637,703	Associate Degrees	20,471
		Bachelor's Degrees	5,603
Post-Graduate	79,103	Masters Degrees	4,371
		Doctorates	32
Functional/Basic Skills	57,359	N/A	
DANTES Testing	255,410	N/A	

HOUSING

The military community offers stability and continuity of living as a backdrop for deployment, reassignment, and day-to-day life. The nomadic nature of military service creates a need for the familiarity found in an American hometown. Whether married or single, servicemembers need a good place to live, opportunities for growth and development, and assistance in dealing with the special aspects of the military lifestyle. Housing and Community and Family support address these needs.

Family Housing

Approximately one-third of military families live in military family housing. Housing is acutely needed in many locations overseas where security is a concern, or appropriate accommodations are not available. In the United States, housing is provided near some installations to offset the lack of affordable, safe, and adequate civilian housing. However, the supply is usually insufficient to meet the demand. As a result, military families forced to live off base must often accept inferior accommodations because housing allowances are not in line with commercial rates. The emphasis on housing is important, since the Department has found that the proportion of personnel remaining in service from bases with high quality housing is about 15 percent higher than among those stationed at places with lower quality housing. The military family housing budget in FY 1996 contains an increase of over $500 million.

The Department has undertaken a comprehensive study to develop a strategic plan for family housing into the 21st century. Experts from personnel, financial management, and housing divisions are looking at where and how to provide accommodations. As mentioned earlier, reimbursement for housing expenses has not kept pace with actual housing costs for personnel who reside in the civilian community.

Part of the strategy to address family housing needs is to expand the housing referral service and promote initiatives to make it easier for families in the civilian community to receive assistance. This will include looking for ways to minimize the costs of relocation within the private sector and also find ways to stimulate private-sector development of housing. To this end, $22 million of next year's defense budget will be put towards private housing ventures. Where these options have been pursued and there is still a need for quality, affordable housing, the Department will request sufficient funds from Congress to maintain and replace existing government facilities.

Bachelor Quarters

Housing for single military members is as equally important as for married members. About a half a million single servicemembers live in quarters. The Department wants to replace run down, cramped buildings and their institutional environment with quality residential communities. To meet this goal, almost $2.5 billion has been budgeted from FY 1996 through FY 2001 to renovate existing facilities and construct new dormitories and barracks. Not all of the old quarters can be renovated or replaced next year, but the Department is working towards better housing in the future.

Fulfilling the Department's commitment to quality housing will not come cheaply. The Quality of Life Task Force will examine innovative alternatives which will take advantage of all possible efficiencies. Living accommodations remain a high priority for the Department to ensure that servicemembers and their families have a good place to live.

COMMUNITY AND FAMILY SUPPORT

Community and family support is the network of recreational, social service, and dependent education to foster healthy individuals and families stationed around the world. These programs mirror those found in an American community, with some programs scoped to meet the needs of a mobile population.

Child Care

Child care is a fundamental quality of life program responding to a large portion of the force with child rearing responsibilities. Child care services assist in meeting mission requirements, and also contribute to the economic stability of families. As part of the Secretary's initiative, funding will be provided to expand child care spaces from 166,000 in FY 1994 to 204,000 spaces in FY 1996. Funding will be increased by $38.1 million.

Military members are parents to 1.2 million children under the age of 12. Not only is the Department the largest provider of child care in the world, but DoD Child Development Services have been heralded as a role model for other government agencies and the nation as a whole. Child care is available in 374 locations worldwide -- in 724 Child Development Centers and over 11,000 family child care homes. The

Department has a potential child care need for 312,000 children. The Department will meet 65 percent of this need with the funding increase.

Child care helps military families achieve economic security in a time when two incomes are essential.

Family Advocacy Program (Spouse and Child Abuse)

As the Department experiences transition and turbulence related to increased personnel tempo (PERSTEMPO), stress and the potential for family violence increase. The Secretary responded to increased incidents of spouse abuse by providing an additional $22.4 million to the Family Advocacy Program (FAP) for prevention and treatment programs. Funds provided in FY 1996 will continue to support reduced case loads carried by FAP counselors, thus increasing treatment options and improving services to victims of family violence.

While treatment and intervention are clearly priorities, the Department is also aggressively pursuing efforts to recognize the potential for abuse, and to institute training and support systems that prevent its occurrence. Congress has increased assistance to new parents and first-term families. New Parent Support Programs will be implemented at installations with high populations of young first-term families. Outreach services will include pre- and post-natal home visits, parent education, and other services.

While the number of children in the birth to age five population is decreasing, the Department is experiencing a rise in the number of children ages 6-18. Currently, over 400,000 youth are in this age group. PERSTEMPO is increasing the strain on families with adolescents, an already stressful time for most families. The Department is concerned about an increase in the number of substantiated cases of child abuse in these age groups, especially the adolescent population.

The Department is also concerned about the general welfare of youth on installations, who are not immune to the forces of violence and gang activity which trouble the nation as a whole. In addition to maintaining Youth Activity Centers, which feature social and recreational activities, the Department will be evaluating the results of new efforts in FY 1995 to address the broader range of social and developmental issues for adolescents and parents.

Morale, Welfare, and Recreation (MWR)

The Secretary's initiative addressed recreation programs in an effort to achieve comparability across the Services. With additional funding of $33.5 million, inequities in appropriated funding support to MWR programs will be brought into alignment. A baseline of $295 per capita will be instituted, with the primary recipient of this funding being the Marine Corps.

Each installation offers programs designed to encourage and enhance physical fitness, mental readiness, and commitment to the military mission. MWR programs include fitness centers, libraries, sports, and athletic programs, as well as a wide variety of other recreational, social, and developmental activities.

In addition to core MWR programs, servicemembers are supported by exchange services. A combination of these resources serve 12 million patrons and participants, and employ over 220,000 people worldwide. To manage the breadth and scope of these programs, the DoD Executive Resale Board (composed of the Services' MWR commanders and resale directors) was recently reconstituted to provide corporate leadership and to aggressively promote cooperative efforts among the Services and agencies.

Revenues generated from exchange sales and MWR programs are used to support the construction initiatives for building and modernization of these facilities. The FY 1995 nonappropriated construction program of $323 million continues the infrastructure support needed to deliver quality services. The Department has streamlined construction and other processes to mirror private-sector corporate operations. Modernization of systems and facilities has fostered the impetus for a more streamlined, businesslike approach. Currently, the Department is updating directives to reduce the complexity of policy and make it easier for the Services and installation commanders to implement broad policy guidance.

As a major contributor to the Military Services' quality of life, the military exchanges provide servicemembers and their families value and distinction in both the merchandise and services offered. These revenues are used to sponsor recreational facilities and activities at affordable prices, thereby promoting readiness, individual and community fitness, esprit de corps, and personal development. A healthy military community relies upon recreational programs to provide opportunities that offset the pressures of military life. In order to keep motivated personnel, the Department must balance the high stress and hard training environment with revitalizing recreational activities.

Armed Forces Professional Entertainment Overseas

Live entertainment overseas adds that little touch of home so desired by troops serving in foreign countries. American entertainers energize troops and offer welcome respite to those who must serve far from home. The Armed Forces Professional Entertainment Office (AFPEO) is a joint-Service program that logistically supports entertainers who are willing to perform free of charge for servicemembers on military installations overseas. Entertainers perform at numerous locations, with a priority to remote and isolated sites; shows are also organized for troops mobilized for missions in such places as Somalia, The Former Yugoslav Republic of Macedonia, or Saudi Arabia. In FY 1994, the AFPEO sponsored 88 noncelebrity tours and 17 celebrity United Service Organizations/DoD tours. These tours performed an estimated 2,300 shows, entertaining over 250,000 servicemembers and their families. This small but vigorous program touches the lives of troops overseas, when they most need it.

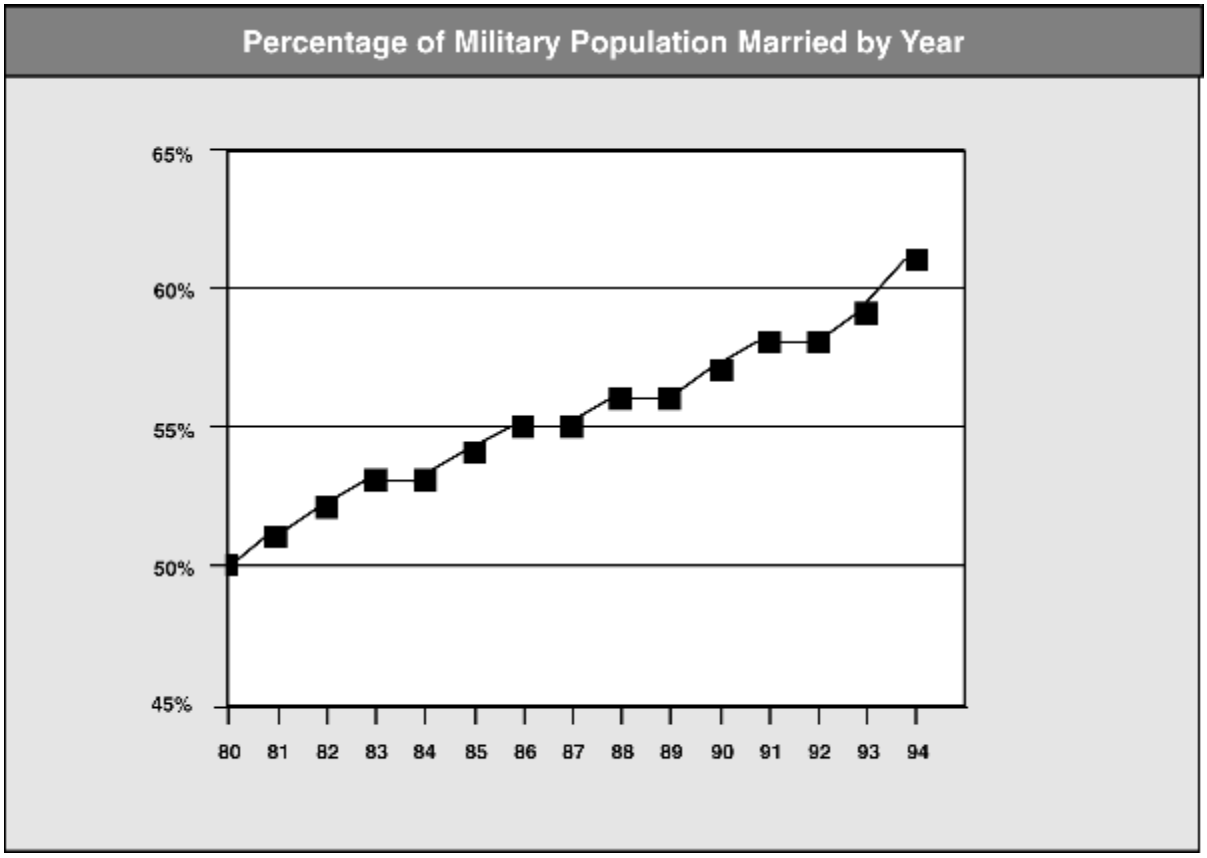
Family Centers

The Department's 317 Family Centers provide programs and facilities to address the unique needs of military and DoD civilian personnel and their families. Due to the continually growing number of personnel with families, the Centers are becoming increasingly more important.

The following chart indicates that Family Centers are the critical link between the military workplace and the home. Their primary mission is to assist commanders in maintaining readiness within the total work force by delivering a wide range of quality services that promote family adaptation to the demands of the military lifestyle.

Family Centers provide direct support across the entire spectrum of post-Cold War missions, including humanitarian relief, peacekeeping, disaster relief, and emergency evacuations. The Centers are integrally involved in providing accurate information and timely assistance to military members and their families.

Family Centers have assumed an increasingly important role in support of mission readiness throughout the recent developments of the post-Cold War environment. During the Persian Gulf War, the Department realized that entire families go to war, and family readiness is a crucial component of overall force readiness. Family Center Deployment Support Programs specifically focus on family preparedness -- teaching skills to ensure that family members have the capabilities and tools to manage in the absence of the military member. In conjunction with these programs, Family Support Groups at the unit level provide a critical resource and link to other support systems.



As PERSTEMPO increases, Family Center programs have refocused efforts to mediate the stress associated with more frequent separation. The Centers continually adapt, evolve, and develop innovative ways to assist the families in meeting the growing challenge of family separation. In addition to their response to increased PERSTEMPO, the Centers continue to feature a wide gamut of services designed to enhance the quality of life for servicemembers and families. These include information and referral, relocation assistance, personal financial management, spouse employment assistance, outreach, family life education, crisis assistance, and volunteer coordination. These essential services create an infrastructure for the quality of life that military families rightfully deserve.

Department of Defense Dependent Schools

The Department's educational structure supports the educational needs of American children of military personnel and some other government related employees. The Department's goal is to maintain quality education for these children. The overseas and CONUS school systems are discussed below.

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS OVERSEAS

Department of Defense Dependents Schools (DoDDS) overseas will support 87,000 students in FY 1996. By school year 1996, schools in Europe and the Pacific will be stabilized from the drawdown. DoDDS will continue to strive for educational excellence by maintaining the Seven-Year Curriculum Review sequence and by pursuing the President's National Education Goals. Also, DoDDS maintains Title XIV, Dependents Education Act, 1978, which requires the Department to offer instruction in special, vocational, compensatory education, and English as a Second Language.

DoDDS' goal to minimize the effects of the drawdown on children's education has been extremely successful. In spite of the reductions, DoDDS students scored 8-19 percentile points above the national average in all Comprehensive Test of Basic Skills (CTBS) and American College Test (ACT) test areas

over the past school year. Although students already perform well above the national norms on Standardized Achievement Tests, DoDDS has set even more demanding targets under the National Education Goal in the areas of math and science as well as core studies throughout the elementary and secondary grades.

DoDDS has maintained a quality educational program in the past with enhancements such as Distance Education, Foreign language Immersion, Reading Recovery (a program to help children-at-risk learn to read), and Advancement Via Individual Determination (a college preparatory program for students who come from backgrounds most underrepresented in four-year colleges and universities). DoDDS has also offered a testbed for applications of advanced technology, including the use of the Defense Simulation Internet. DoDDS now serves all preschool children between the ages of 3-5 with disabilities under the provisions of the Individual With Disabilities Education Act.

DEPARTMENT OF DEFENSE DOMESTIC DEPENDENT ELEMENTARY AND SECONDARY SCHOOLS IN CONTINENTAL UNITED STATES

The Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) program, formerly referred to as Section 6 Schools, was reauthorized in the National Defense Authorization Act for FY 1995 by the addition of paragraph 2164, Chapter 108 of Title 10, U.S. Code. These stateside schools provide education to approximately 33,000 eligible dependents residing on 16 military installations and in Puerto Rico. The schools have locally elected school boards which participate in the development and oversight of policies, procedures, and programs. Current educational initiatives related to the National Education Goals include special projects to support a high degree of parental participation in child development, preschool, and early childhood development programs. Other resources range from advanced placement courses to special instructional models and strategies designed to help students learn. This program also has oversight responsibility and fiscal support of eight special contractual arrangements with local educational agencies in five states and Guam, serving an additional 6,000 students.

A quality education program is essential to the American lifestyle. The military community is no exception. Department schools must allow the children of servicemen and women access to a school system that will deliver an education program that is equal to the best public school systems in CONUS, and will prepare students to compete in a global economy.

Chaplain Services

The military chaplaincies serve as the link between servicemembers, their families, and support services throughout the Department. They act as liaisons with Family Centers, Family Advocacy, and other military relief programs; they also work with outside organizations such as the American Red Cross and drug and alcohol rehabilitation centers. Chaplains offer expert assistance at pre- and post-deployment briefings, provide pastoral care to family members who remain at home, and facilitate the religious and spiritual needs of deployed servicemembers worldwide. Across the globe, chaplains support military personnel and their families with their specialized methods of counsel and relief.

Equal Opportunity

The Department continues to recognize that one of the keys to maintaining an acceptable quality of life for its members is to ensure equitable treatment for all. Besides affecting quality of life, equal opportunity is also a readiness issue. If DoD personnel are not treated fairly, then the missions they are asked to do will suffer. Therefore, the Department is fully committed to a policy of equal opportunity and will not tolerate discrimination or harassment of any kind.

Transition Support and Services

The consideration and assistance given to over 300,000 servicemembers and their families who return to civilian life each year remain priorities for the Department. These veterans are a tremendously talented

pool of employees -- 99 percent have high school diplomas, 22 percent have some college credit, and approximately 19 percent have at least one college degree. Operation Transition's goal is to prepare servicemembers and their families to make a successful transition to civilian life.

Each Military Service, in conjunction with DoD, the Departments of Labor (DoL) and Veterans Affairs (VA), and state employment service agencies, has initiated innovative transition programs. During FY 1994, servicemembers made 724,964 visits to transition offices for preseparation counseling and employment assistance. Within the United States, DoL and VA also provide employment assistance workshops at 204 selected bases. In FY 1994, 163,044 servicemembers and spouses participated in 3,686 workshops. In a perfect example of seamless government, DoD, DoL, and VA implemented the Servicemember Occupational Conversion and Training Act to address the needs of unemployed veterans, particularly those whose military skills do not readily translate to civilian jobs. As of November 1994, VA processed 58,235 training applications and 8,388 eligible veterans have been placed in job training under this program. A new program, to be administered jointly by DoD and Department of Justice in 1995, will promote the entry of qualified servicemembers into law enforcement.

Automated systems are a vital part of DoD transition programs. The Defense Outplacement Referral System (DORS) is a resume data base and referral system linking private sector employers to departing servicemembers and spouses. In FY 1994, there were 7,980 employers and over 60,000 personnel registered in DORS. Since December 1991, 730,078 resumes have been sent to employers. The Transition Bulletin Board (TBB) allows employers to list job openings at military installations worldwide. In September 1994, TBB listed 9,693 want ads, business opportunities, and federal jobs. The Verification Document (DD Form 2586) translates servicemembers' military skills and training into civilian terms. The public and community service registry, established in June 1994, contains information on organizations desiring to hire veterans. So far, 125 organizations have registered, with hundreds being researched for inclusion. Since June 1994, 69,751 separating personnel have registered.

Finally, DoD provides additional benefits (for example, extended health care and extended commissary and exchange privileges) to involuntarily separated military members and their families, and to certain voluntary separatees.

Troops to Teachers Program

Troops to Teachers is a teacher and teacher's aide placement assistance program designed to assist separated servicemembers, DoD and Department of Energy civilians, and certain defense contractor employees in becoming certified and employed in the teaching profession. The program is designed to help improve the quality of public school education by injecting the talent, skills, and experience of eligible personnel into schools serving a concentration of students from low income families.

This initiative furnishes stipends of up to $5,000 to selected, eligible participants to defray the cost of becoming certified through a state's alternative certification program. In addition, it awards grants of up to $50,000, paid over five years, to local education agencies for each participant they agree to hire as a teacher or teacher's aide in a school serving a concentration of low income families. DoD received over 5,100 applications for this program and began placing departing servicemembers in teaching positions over the past summer. Currently, over 125 individuals are teaching in school districts across the country.

Relocation/Base Closure Assistance

As the force draws down, base realignment and closure have become a major source of added stress for military and civilian personnel and their families living and working on closing installations. A Base Closure Assistance Team is being organized to serve as a commander's resource and expert consultation team to address individual installation issues. The multi-disciplinary teams will work with affected installations to identify potential problem areas and to develop strategies and solutions tailored to local needs. In another initiative, the Department is gathering lessons learned and developing resource and planning guidance to ensure that organizational and individual needs are addressed during the closure and

realignment process. The overall goal of this effort is to minimize the stress of closure by sustaining support functions through innovation and community collaboration in a climate of decreasing resources.

PERSONNEL TURBULENCE

As missions continue to increase, personnel turbulence remains a major concern. As part of the review for the Secretary, the Quality of Life Task Force will advise on issues that affect personnel turbulence. Currently, servicemembers not only have to work hard but must also deploy in places the Department requires in support of national interests. As the force has downsized, the level of operations have undergone a dramatic increase. More time spent deployed in support of operations results in less time available for training, family, and rest. Since frequency and length of duration can affect a family's stability, finances, and other aspects of living, the Department must commit to sponsoring programs for families who are affected by increased PERSTEMPO. Information on specific PERSTEMPO rates is in the formative stages. However, the goal is to find a balance between mission and training requirements that draw servicemembers away from home and their need to spend valuable time with their families.

CONCLUSION

The Secretary has placed quality of life as one of the highest priorities in the Department. The intangible value of a good standard of living sets the stage for a high quality, well-trained, and motivated force. The improvements planned for quality of life reach out to each and every servicemember. They represent an enormous commitment to people -- the foundation of military readiness.

COOPERATIVE THREAT REDUCTION

INTRODUCTION

With the demise of the Soviet Union and the end of the Cold War, the level of nuclear threat confronting the United States was reduced significantly. Yet, when the Soviet Union disintegrated, an estimated 30,000 nuclear warheads were spread among the former Soviet Republics. Approximately 3,200 strategic nuclear warheads were located outside of Russia on the territories of Belarus, Kazakhstan, and Ukraine. Political, social, and economic upheaval heightened prospects that the former Soviet republics would not be able to provide for safe disposition of these nuclear weapons or other weapons of mass destruction (WMD).

The dangers posed by this situation were clear: diversion or unauthorized use of weapons, diversion of fissile materials, and possible participation of Soviet weapons scientists in proliferation efforts in other countries. Despite significant positive changes occurring in the New Independent States (NIS), these weapons continued to pose a threat to U.S. national security.

Taking advantage of a historic opportunity, Congress initiated the Cooperative Threat Reduction (CTR) program in November 1991 to reduce the threat to the United States from these weapons of mass destruction. Often referred to as the Nunn-Lugar program, this congressional effort provided the Department of Defense authority and funding for the CTR program. Through the CTR program, DoD provides assistance to the eligible states of the former Soviet Union to promote denuclearization and demilitarization and to reduce the threat of weapons proliferation.

A REVITALIZED PROGRAM

As of the summer of 1993, the CTR program had spent almost none of the $800 million authorized for denuclearization and dismantlement efforts. Expenditures awaited agreement between the United States and Russia, Belarus, Ukraine, and Kazakhstan on how the funds would be spent. Once those agreements were signed in the fall and winter of 1993-94, obligations of funds soared from $113 million in January 1994 to $478 million in December 1994. Thirty-six agreements for committing nearly $900 million of available funds from FY 1992 to FY 1994 have been negotiated and signed, and will be executed over the next several months and in some cases years. The negotiation phase of the CTR program is over, and the implementation phase has begun.

To keep up with the increase in implementation activity, a CTR Program Office was created within the Office of the Secretary of Defense. This office helps plan future assistance activities supporting CTR goals, manages the day-to-day business of working with representatives in recipient nations to identify specific needs, and oversees the contracts with U.S. (and in some cases recipient nation) firms to provide such assistance. Since the CTR program provides goods and services -- rather than cash -- expenditures are directly related to denuclearization, dismantlement, and proliferation prevention efforts.

CTR operations in Ukraine are symbolic of both the challenges of arranging for assistance and the benefits of cooperation. Despite Ukraine's pledge in the Lisbon Protocol of 1992 to become a non-nuclear state, the actual process of warhead removal to Russia was not agreed upon until the United States concluded the Trilateral Statement with Russia and Ukraine. Critical to the success of these negotiations was the United States' promise of CTR assistance. The agreements to begin the CTR program were not concluded until December 1993 -- two years after negotiations began. Promise of CTR made the Trilateral Statement in January 1994 possible; delivery of CTR assistance led to further progress. Once

the necessary agreements had been signed, assistance began to flow, in the shape of security equipment, vehicles, cranes, fuel, transportation equipment, and similar items. In the course of efforts to implement the Trilateral Statement, Ukrainian officials requested several specific items on an accelerated schedule. Within three weeks, a shipment was on its way. In August 1994, Leonid Kuchma was elected president, and requested CTR assistance in helping meet important domestic and international goals within his first 100 days in office. Cooperating closely with the Kuchma government, the CTR program identified areas where speedy provision of aid would have visible impacts, and rushed fuel, lubricants, emergency response support equipment, and industrial and computer equipment to accelerate the deactivation of SS-19 and SS-24 missile silos. One outcome of this demonstrated willingness to help Ukraine live up to its commitments was the Ukrainian legislature's November 1994 vote to approve accession to the Nuclear Non-Proliferation Treaty (NPT) as a non-nuclear weapon state, an outcome no one took for granted. Ukraine formally acceded to the NPT in December. The case of Ukraine demonstrates how effectively and quickly the CTR program can be implemented, once the negotiation process is completed.

CTR PROGRAM OBJECTIVES

The objectives of the CTR program as established by Congress are:

- To assist the former Soviet states to destroy nuclear, chemical, and other weapons of mass destruction.
- Transport, store, disable, and safeguard weapons in connection with their destruction.
- Establish verifiable safeguards against the proliferation of such weapons.
- Prevent diversion of weapons related scientific expertise.
- Facilitate demilitarization of defense-industries and conversion of military capabilities and technologies.
- Expand defense and military contacts between the United States and the NIS.

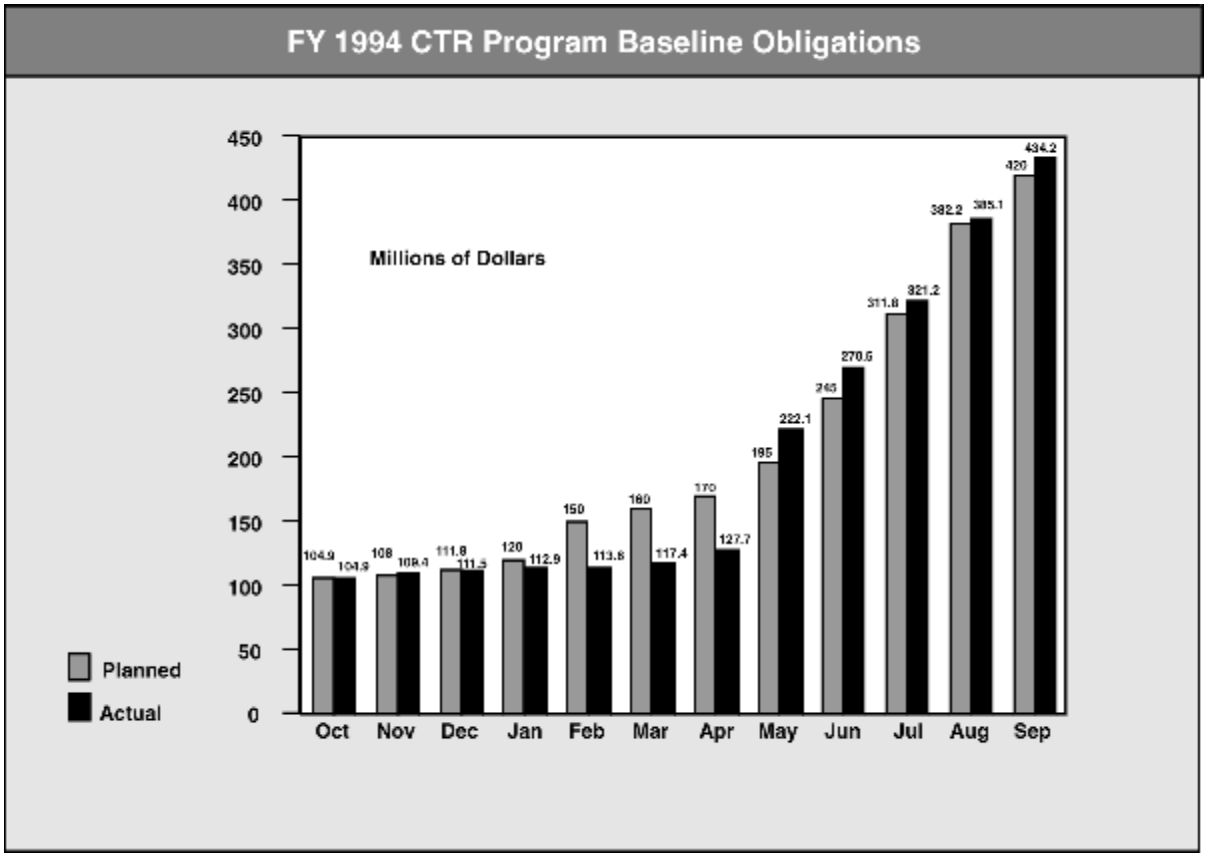
These objectives are inextricably linked to each other, as are the corresponding CTR program activities. Meeting the objective of safeguarding nuclear weapons in Russia, for instance, will also help prevent proliferation, a growing concern in light of recent reports of nuclear smuggling.

CTR program activities generally fall into four categories in accordance with these objectives. First, Destruction and Dismantlement activities accelerate the destruction and dismantling of weapons of mass destruction and their launchers in the four eligible states where they remain by providing leverage to encourage these countries to dismantle and by providing the actual equipment and training required to implement dismantlement decisions.

Second, through Chain of Custody activities, the CTR program decreases the dangers from the nuclear warheads and fissile materials that remain in the NIS and represent a potential threat to the United States. During the difficult period of transition in these states, the continued security and custody of nuclear weapons and materials is vitally important to both the United States and the NIS.

Third, CTR supports Demilitarization efforts which decrease the long-term threat by reducing the capacity and economic pressures in the NIS to continue to produce weapons of mass destruction. The industrial partnership projects in CTR are an effort to reduce the potential of a future nuclear threat at its source. Furthermore, the transformations created through the industrial partnership arrangements prevent proliferation by reducing both the supply of WMD available for foreign sale or diversion and the incentives for relying on such sales for income.

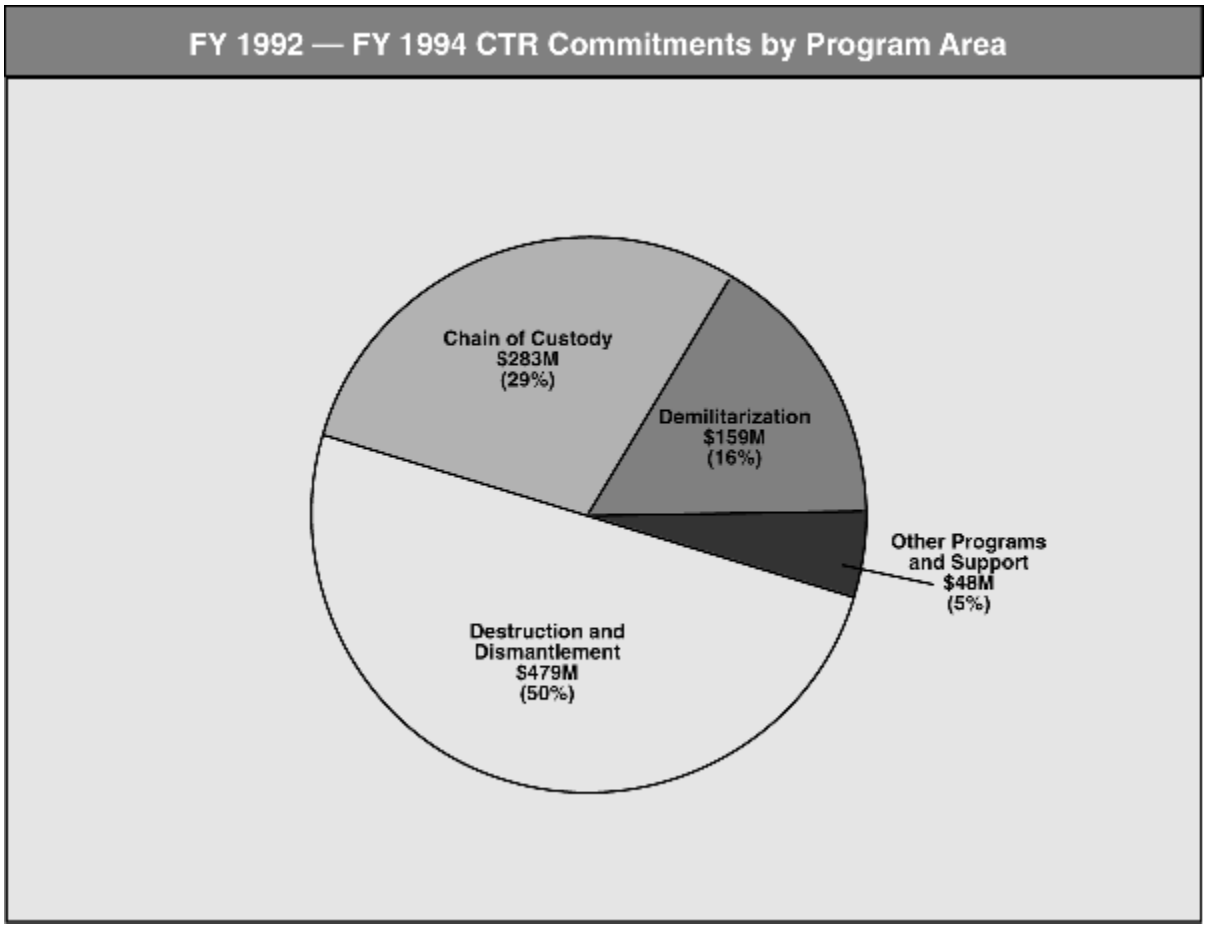
Lastly, the CTR program supports Other Programs and Support such as the expansion of defense and military contacts with the NIS. When the Soviet Union dissolved, the republics it contained were left with structures, forces, and equipment that were not well suited to their new-found sovereignty. The United States, through defense and military contacts, has been able to assist in the development of democratic and civilian control of military departments and the restructuring and downsizing of defense capabilities to better reflect these new nations' current needs. For example, the CTR program sponsors regular exchanges on defense strategy and greater transparency of budgets and programs. These countries will remain important players in world events and the United States benefits greatly from the close contacts with its military and defense counterparts. These contacts are part of U.S. efforts across the board to expand the domain in which U.S. security concerns coincide, rather than conflict, with those of the NIS. Recognizing that differences will still occur, developing long-term institutional relationships contributes to improving substantive professional dialogue on important defense and military issues, in addition to facilitating denuclearization and nonproliferation activities.



PROGRESS IN CTR IMPLEMENTATION

To meet CTR objectives, the program consists of numerous separate projects agreed to in the agreements and memoranda of understanding between the United States and Russia, Belarus, Ukraine, and Kazakhstan. The CTR program has grown impressively, particularly over the past year, with the baseline obligation rate increasing over four-fold, to about $434 million at the end of FY 1994 (see chart above). By that time, DoD had notified Congress of proposed obligations totaling nearly $969 million from funds authorized for FY 1992 to FY 1994 for specific projects for the eligible states. More importantly, the total assistance committed under agreements concluded with DoD and for which implementation is actually

underway is now $898 million. The following chart indicates CTR funding commitments by program area.



The CTR process from negotiation, to project formulation, to requirements definition, to final execution, involves many steps in the respective state-to-state relationships as well as within the U.S. government. Congress has directed that American contractors be used for CTR support to the extent feasible. Accordingly, DoD contracting for CTR goods and services is accomplished based on Federal Acquisition Regulations to ensure that U.S. businesses are treated fairly. In the final analysis, CTR benefits the U.S. economy by providing additional jobs for American workers and expanded markets for U.S. corporations.

The United States is not the only country providing assistance to the NIS for dismantlement. The United States is closely coordinating its assistance efforts with its allies through the NATO and G-7 forums to eliminate needless duplication and meet the needs of Russia, Ukraine, Kazakhstan, and Belarus. Japan has pledged $100 million of assistance, and the NATO allies are working with the United States to develop assistance programs in Ukraine. Additionally, numerous states and international organizations including Sweden and the International Atomic Energy Agency are developing material control and accounting assistance programs with Kazakhstan. In order to ensure that assistance provided under CTR is being used as intended, the CTR agreements include provisions for the United States to conduct audits and examinations of the assistance provided.

REDUCING THE THREAT

CTR activities have contributed significantly to the reduction of the threat over the past three years. U.S. offers of assistance under the program have been instrumental in convincing Belarus, Kazakhstan, Russia, and Ukraine that they could shoulder the economic, political, and technical burdens of weapons dismantlement and demilitarization.

The CTR assistance agreement signed with Ukraine in December 1993 paved the way for the January 14, 1994, Trilateral Statement agreed to by the United States, Russia, and Ukraine which provided the transfer to Russia for dismantlement of all nuclear warheads from Ukraine. As of October 1994, Ukraine was ahead of schedule, having deactivated 610 of 1,734 deployed warheads on its territory and sending 360 of them to Russia for dismantlement. CTR assistance also played a very significant role in encouraging Ukrainian accession to the Nuclear Non-Proliferation Treaty in December 1994.

CTR program funds are used directly to stimulate and support faster dismantlement in the NIS and enhance nonproliferation efforts. CTR assistance has provided political and material support for:

- Ukraine's decision to denuclearize and sign the Nuclear Non-Proliferation Treaty.
- The removal of 600 kilograms of highly enriched uranium from Kazakhstan, enough for 20 nuclear weapons.
- The removal of more than 1,600 nuclear warheads from delivery systems in the four republics of which over 900 have been withdrawn to Russia from Ukraine, Belarus, and Kazakhstan.
- Measures to safeguard fissile material in Russia, Ukraine, and Kazakhstan.
- The deactivation and dismantlement of SS-19 and SS-24 intercontinental ballistic missiles (ICBMs) in Ukraine, the elimination of SS-18 silos in Kazakhstan, and elimination of submarine-launched ballistic missile (SLBM) launchers, ICBMs, silos, and heavy bombers in Russia.
- Reemploying over 4,000 former Soviet weapon scientists on peaceful civilian research projects.
- Twelve projects through which U.S. companies are working with defense enterprises in the NIS to help convert them from producing WMD to manufacturing civilian goods.
- Hiring a U.S. prime contractor to assist Russia in planning for chemical weapons destruction.
- Sponsoring 116 joint events with the NIS armed forces to improve their cooperation with the United States and their ability to operate under democratic governments with civilian leadership.

AN INTEGRATED APPROACH

These successes come not as the result of isolated donations of equipment, but are a product of the close interaction both between representatives of the United States and the recipient nations, and among the types of assistance provided. This integrated approach highlights the importance of all elements of the program to the goals it seeks to achieve.

CTR efforts in Ukraine demonstrate this multipronged approach. The assistance projects noted above are only part of the story for Ukraine. The complete story must be understood as a process of demonstrating to Ukraine that its security would be better served without nuclear weapons than with them. A key juncture in that realization came about in December 1993 when Ukraine and Russia could not agree on a course of warhead removal, and many in Ukraine doubted U.S. willingness to assist them in the course it had chosen. The Trilateral Statement had four components: transfer of nuclear warheads to Russia for dismantlement, compensation for fissile materials, security assurances to Ukraine, and CTR assistance. The United States was able to broker a deal in which the Ukrainians started the process of returning weapons to Russia, and Russia agreed to provide nuclear reactor fuel to Ukraine as compensation for the value of the fissile materials returned. This landmark agreement was cemented, as already noted, by U.S. pledges to provide assistance to Ukraine in their dismantlement efforts under the CTR program.

In an effort to speed the specific action that eliminates much of the threat to the United States -- removing warheads from missiles -- the United States offered to accelerate delivery of materials useful for this so-called early deactivation. The fruits of this effort were dramatically visible when the Secretary of Defense visited a missile facility at Pervomaysk in March 1994. There he witnessed both the seriousness of the launch officers and the U.S. targets of the missiles deployed there, and the stunning sight of a modern intercontinental missile with its 10 deadly warheads -- intended for cities and bases in the United States -- permanently removed.

These very tangible successes would have been impossible without other elements of the CTR program which were brought to bear on this challenge. The CTR program also financed a continuous series of defense and military contacts which went far to assure Ukraine that the United States (and the West) had powerful interests in Ukraine's stability and success beyond the nuclear weapons based on its soil. The United States has provided expertise and support in helping Ukraine develop a national armed force that reflects its sovereign needs. Visits to U.S. training centers, advice on budgeting and planning, participation in joint peacekeeping exercises, easing tensions with Russia over the Black Sea Fleet, and other activities have made tangible America's commitment to Ukrainian security.

Individuals involved with nuclear weapons deserve to know they have a viable future in a denuclearized Ukraine. The soldiers and civilians who devoted their lives to the production, operation, and maintenance of nuclear weapons are in the process of working themselves out of their jobs. If the United States desires the elimination of Soviet nuclear weapons, the economic and social consequences of dismantling the entire complex must be addressed. Two aspects of the CTR program provide some assistance in this regard, at the cost of only 16 percent of the entire program. At the missile bases in Pervomaysk and Khmelnitsky in Ukraine, the former officers of the Soviet Strategic Rocket Forces are the very people who are helping close the base. These military people have no other homes, and the Ukrainian constitution requires that housing must be provided before they can be demobilized. The pace of dismantlement is therefore inhibited by the inability of the Ukrainian Ministry of Defense (MOD) to provide the required housing. The CTR program is helping to solve this problem as part of a program under which a former shipbuilding plant and a closing missile silo factory will produce with American partners housing for these demobilized missile officers, and later, for commercial sale. Providing profitable employment for former defense workers further reduces arguments for continued manufacture of missile components, and discourages them from taking their skills elsewhere. At the same time, U.S. businesses gain access to a new market for their goods.

This integrated approach addresses the full scope of the challenge facing these nations in completing their arms control agreements and preventing further nuclear dangers from threatening themselves or others. The absence of any one part of the effort will almost certainly result in the failure of other aspects.

PRIORITIES FOR FY 1995

The CTR program has shown important progress in all areas since its beginnings three years ago. In the past year, the program has matured and the number of activities has increased exponentially. However, much work still needs to be done.

For FY 1995, the CTR program will continue to provide Russia, Belarus, Kazakhstan, and Ukraine dismantlement and demilitarization assistance, with priority placed on accelerating strategic offensive arms elimination. CTR assistance is used to facilitate ongoing deactivation and dismantlement of strategic nuclear systems according to START I and the January 1994 Trilateral Statement and will facilitate and accelerate elimination of strategic delivery systems provided for under START II.

Additionally, the CTR program will continue to provide assistance to enhance the safety and security of nuclear materials with emphasis on strengthening the entire chain of custody -- from weapons elimination and dismantlement, to monitoring the storage of plutonium. In cooperation with the Russian MOD, CTR may provide assistance to strengthen the regime of security for nuclear weapons.

Another important CTR project involves assistance to Russia in efforts to destroy the 40,000 tons of declared chemical weapons agent Russia inherited from the former Soviet Union. Without substantial technical and monetary assistance from the United States and other countries, Russia will have difficulties meeting the Chemical Weapons Convention (CWC) destruction schedules. Through the CTR program, the United States will continue to assist Russia in weighing alternative technologies to destroy its chemical stockpiles as required by the CWC. The subsequent task of actually destroying the stockpile might benefit from an infusion of U.S. technology, funds, and expertise provided under CTR and will be given careful consideration.

Finally, CTR future priorities include efforts to help demilitarize the nuclear infrastructure which supported the massive Soviet weapons arsenal. Nuclear infrastructure elimination will allow existing military manpower, material, infrastructure, and the supporting industrial base to be reoriented towards peaceful pursuits. In addition, industrial partnerships remain an important element of this effort and these activities will transition to the Defense Enterprise Fund for management.

CONCLUSION

The CTR Program is a small investment with a big payoff. The United States spent billions of dollars defending against weapons of mass destruction in the Soviet Union during the Cold War. With CTR assistance, substantial progress has been made in reducing the threat from these weapons and in preventing the emergence of new threats in the post-Cold War world. Continuing this program of defense by other means will continue to enhance U.S. national security for the future.

COUNTERPROLIFERATION AND TREATY ACTIVITIES

INTRODUCTION

The Department of Defense has made significant progress during the past year moving the Counterproliferation Initiative from policy formulation to operative implementation throughout many functions of the Department and other agencies of the U.S. government. Much work remains, and DoD is continuing to identify potential response measures to prepare for the dangers stemming from the proliferation of weapons of mass destruction (WMD).

BACKGROUND

The Defense Counterproliferation Initiative is part of the reorganization of forces and plans after the Cold War and therefore is best understood in context with the Bottom-Up Review (BUR). As a result of the BUR, DoD now focuses its planning on two major regional conflicts (MRCs), conducted nearly simultaneously, rather than on global war with the Soviet Union centered on the defense of Europe. As DoD's understanding of these MRCs developed, it became clear that there was a very high probability that aggressors would threaten, wield, or use WMD. Earlier assumptions that conflicts not involving the Soviet Union would be fought solely with conventional weapons needed to be reviewed and new guidance issued.

Nuclear, biological, and chemical (NBC) weapons -- collectively weapons of mass destruction -- are no longer a hypothetical threat in regional conflicts. Almost anywhere the United States is likely to deploy forces around the world -- Northeast Asia, the Persian Gulf, the Middle East, and Europe -- states are likely to have WMD. For DoD to do its job in this new era, to reshape its forces for the new world, it must take seriously this aspect of future conflicts. The American people expect their armed forces to be ready to win, and the men and women in uniform deserve to have the best equipment and training for all future conflict, including if opponents resort to WMD. This is what the Counterproliferation Initiative is intended to do.

The American experience in Operation Desert Storm inspired this work on counterproliferation. Although U.S. forces performed spectacularly, one can see in Operation Desert Storm the implications of WMD for defense becoming evident. In each of the categories of weapons of mass destruction, and in missiles, U.S. forces received a surprise.

First, Saddam Hussein's nuclear weapon program was farther along and of a different technical character than was thought before the war, although not yet to the point where he had enough fissile material for a bomb. Second, Hussein had a large stock of chemical weapons, had already used them in a war, but did not use them against the coalition forces in Operation Desert Storm. His reasons for non-use must be understood. The third surprise has to do with biological weapon threats. Saddam Hussein was known to have certain biological weapon facilities, but U.S. forces did not understand fully how to destroy them while minimizing collateral contamination. The next conflict cannot be fought without the answers to these important questions. Finally, Iraq's Scud missiles had a significant political impact during the conflict on Iraq's neighbors and their likelihood of entering the war or being drawn into the conflict. Even though the military impact of the Scuds was minimal, the United States must be better prepared to defend against missiles the next time.

In spite of Iraq's rudimentary arsenal of WMD, each area mentioned above delivered an unpleasant surprise. U.S. forces must not be caught unaware again; they deserve the best efforts to ensure that they

are not. The Counterproliferation Initiative addresses the role of WMD in major regional conflicts and is therefore an essential part of preparing U.S. forces for future conflicts.

Although the counterproliferation effort grew out of experiences with the potential military consequences when states acquire WMD, the first priority remains to prevent the proliferation of WMD. Where proliferation is successfully prevented, the operational consequences for forces of threatened or actual WMD use are negligible. Military preparations complement and support prevention efforts in two ways.

First, defense preparations for WMD use make clear to potential proliferators that nuclear, biological, and chemical weapons are not the Achilles' heel of otherwise superior U.S. conventional forces, nor will an aggressor with WMD be able to deter the application of U.S. military power. To the extent that states seek to develop WMD to gain some degree of leverage over the United States and its allies, the results of the Counterproliferation Initiative should lessen their motivation to proliferate.

Second, as understanding of the military consequences of WMD improves, prevention policies become better focused on those issues and items of greatest military significance. For example, in the field of export controls, DoD's military and technical expertise make an important contribution to judgments as to the military significance of a particular export.

As these examples make clear, counterproliferation is able to build on proliferation work the Department has been involved in for some time in the context of an East/West conflict with the Soviet Union. Similarly, DoD has been a strong, active, long-time participant in U.S. efforts to prevent proliferation through diplomacy. The handling of the nuclear challenge from North Korea provides just one example. The Department's paramount concern in this critical region was the halting of the existing North Korean nuclear program, poised last June to leap forward in its production of weapons-grade plutonium. Under the Framework Agreement now in place, North Korea has halted and must eventually dismantle its nuclear weapons-related program, and comply fully with the Nuclear Non-Proliferation Treaty (NPT) and International Atomic Energy Agency (IAEA) full-scope safeguards. Unfortunately, in other cases the experience with Iraq shows both that dedicated states can break through prevention barriers, and that U.S. forces need to be better prepared.

CONCEPTUAL FRAMEWORK FOR COUNTERPROLIFERATION

To be successful, DoD's support for government-wide prevention efforts and its drive to improve protection capabilities must be applied across a range of possible responses to proliferation. This demonstrates a fundamental aspect of an effective strategy to grapple with proliferation -- it requires the consistent, integrated application of the entire range of possible responses at the government's disposal.

For illustrative purposes, the range of possible government responses can be summarized as follows:

- Dissuasion to convince non-WMD states that their security interests are best served through not acquiring WMD.
- Denial to curtail access to technology and materials for WMD through export controls or other tools.
- Arms control efforts to reinforce the Nuclear Non-Proliferation Treaty, the Biological and Chemical Weapons Conventions, nuclear free zones, conventional arms treaties that stabilize arms races, confidence and security building measures, and Anti-Ballistic Missile Treaty clarification efforts to allow deployment of advanced theater missile defenses.

- International pressure to punish violators with trade sanctions to publicize and expose companies and countries that assist proliferators, and to share intelligence to heighten awareness of the proliferation problem.
- Defusing potentially dangerous situations by undertaking actions to reduce the threat from WMD already in the hands of selected countries -- such as agreements to destroy, inspect, convert, monitor, or even reverse their capabilities.
- Deterring use by retaining the military, political, and economic capacity to retaliate against those who might contemplate the use of WMD, so that the costs of such use be seen as outweighing the gains.
- Military capabilities to be prepared to seize, disable, or destroy WMD in time of conflict if necessary.
- Defense capabilities, both active (theater missile defenses (TMD)) and passive (protective gear and vaccines), that will mitigate or neutralize the effects of WMD and enable U.S. forces to fight effectively even on a contaminated battlefield.

ONE YEAR'S PROGRESS

The first year of the counterproliferation policy initiative has produced progress in several areas of defense activity, including acquisition planning, budgeting, military planning, international cooperation, and support to arms and export control regimes. As is essential with all new initiatives, the right balance has been struck between thorough, step-by-step planning and early action to remedy long identified shortfalls. A comprehensive review of the military issues related to counterproliferation has been completed to ensure that all aspects of the issue -- from weapon systems to logistical support -- are assessed. At the same time, several acquisition programs already in the pipeline have been augmented with modest funding to remedy known shortfalls. While much work is yet to be done to ensure that counterproliferation is fully integrated throughout the Department, there have been several important achievements to date.

The Nonproliferation/Counterproliferation Program Review Committee

The Deputy Secretary of Defense led an interagency study of nonproliferation and counterproliferation activities as Chairman of the Nonproliferation/Counterproliferation Program Review Committee (NPRC). This was in accordance with Section 1605 of the FY 1994 National Defense Authorization Act in which Congress identified eight functional areas for study:

- Intelligence.
- Counterforce capabilities.
- Battlefield surveillance.
- Inspection support.
- Passive defense
- Export control support.
- Active defense.
- Counterterrorism.

The NPRC identified 16 priority technologies and programs with the greatest potential for making contributions to U.S. nonproliferation and counterproliferation capabilities. Generally, these efforts emphasize seven areas:

- Detection and characterization of biological and chemical agents.
- Detection, characterization, and defeat of hard underground targets.

- Detection, location, and neutralization of WMD inside and outside the United States.
- Development and deployment of additional passive defense capabilities for U.S. forces, including development and production of biological agent vaccines.
- Collection and analysis of intelligence.
- Support for WMD-related arms control measures.
- Missile defense capabilities.

The Executive Branch has established two committees to continue the research and development (R&D) program review process. The Senior Standing Committee on Nonproliferation and Export Controls will operate as an executive committee of the National Security Council's Interagency Working Group (IWG) on Nonproliferation and Export Controls. The Nonproliferation and Arms Control Technology Working Group will report to the relevant policy IWGs and to the Committee on National Security within the National Science and Technology Council structure. Congress also directed DoD to lead a follow on, interagency Counterproliferation Program Review Committee, composed of the Secretary of Defense, the Secretary of Energy, and the Director of Central Intelligence, to continue the work of the NPRC, but with a scope limited to identifying priority counterproliferation technologies and programs, which will report in May 1995 and 1996.

Counterproliferation Acquisition Funding for FY 1995

DoD has a number of programs and activities currently underway that are either unique to the counterproliferation mission or are strongly related. Unique activities include detection of NBC hazards, characterization of NBC targets, and defeat of tactical ballistic missiles and aircraft carrying NBC weapons. Strongly related activities include application of surveillance assets, such as unmanned ground sensors, to perimeter monitoring. As part of the NPRC report, DoD determined that for FY 1995, the Department has budgeted $522.1 million for unique programs and activities, and another $1.9 billion for strongly related programs and activities.

Taking into account current programs and activities, the NPRC nevertheless determined that there were high priority shortfalls in DoD's operational capability to implement its counterproliferation mission and identified priority efforts totaling approximately $295 million. DoD, however, could only fund $80 million for counterproliferation programs in the first year of the FY 1996-2001 Program Objective Memorandum (POM) and approximately $556 million over the POM's six years. These programs, current and planned, are an essential contribution to ensuring that DoD is fulfilling its responsibility to the American people to have the best prepared forces in the world for any and all future conflicts.

For FY 1995, Congress authorized $60 million for DoD counterproliferation programs. This money will be used to accelerate top priority DoD programs in the areas identified in the NPRC report and prioritized by the Joint Warfighting Capability Assessment (JWCA) for deterrence/counterproliferation. It will be managed according to an execution plan that identifies specific objectives to be achieved, products to be provided, schedules for achieving objectives and providing products, and year-by-year funding allocations for each specific project. These programs are:

- Detection and characterization of chemical/biological agents. This initiative will accelerate fielding of standoff and point detection and characterization systems by up to six years. It will also address integration of these sensors into existing and planned carrier platforms, emphasizing man-portability and compatibility with unmanned aerial vehicles.
- Detection, characterization, and defeat of hard, underground structures. This program promotes new capabilities including advanced sensors, enhanced lethality, and penetrating weapons to

address the need for better probability of target defeat, while minimizing collateral effects and advanced targeting and strike planning aids.

- Detection, location, and neutralization of WMD inside and outside the United States. This program will enhance U.S. capabilities to defend against paramilitary and terrorist WMD threats/use. This will include identification and evaluation of systems, force structure, and operational plans to protect key military facilities and logistics nodes. It will also provide for joint training exercises to enhance U.S. overall ability to respond to potential biological/chemical weapon threats and to improve readiness.
- Development and deployment of additional passive defense capabilities for U.S. forces. This program develops and fields improved protective suits, shelters, filter systems, and equipment two to five years faster than presently programmed. It also restores funding to the technology base supporting research of improved decontamination methods.

New Counterproliferation Missions and Functions for the Military

The Chairman of the Joint Chiefs of Staff (CJCS), at the request of the Deputy Secretary, conducted a six-month review of the missions of the Commanders in Chief and functions of the armed services in support of the counterproliferation policy and will soon present several recommendations to the Secretary. To guide his study, the CJCS issued terms of reference for counterproliferation activities to combatant commanders that cover situations where the military might be called upon to support U.S. policy. The study addressed how the Services organize, train, and equip their forces to support the counterproliferation policy and missions, responsibilities, and force structure of each combatant command.

Improved Intelligence Support for Counterproliferation

Effective intelligence support is central to all aspects of the DoD counterproliferation effort, and the Intelligence Community continues to respond to meet new needs for operation-specific products. The Non-Proliferation Center (NPC) -- the focal point in the Intelligence Community of the collection and analysis of intelligence related to proliferation -- now has a Deputy Director for Military Support in recognition that one of the its important tasks is supporting military needs, in addition to its traditional work in support of diplomatic nonproliferation efforts. Toward the same goal of greater emphasis on support to the military, DoD has tripled the number of personnel it assigned to the NPC. Correspondingly, the Defense Intelligence Agency is also ensuring that appropriate attention is given to military intelligence for countering WMD.

International Cooperation

The Department has been working with America's long-time allies in Europe and with Japan to develop a common approach on counterproliferation. Following President Clinton's emphasis at the January 1994 Summit on the danger to NATO from proliferation of WMD and the initiative launched by allied leaders, DoD has made significant progress toward integrating a counterproliferation policy into the new, post-Cold War agenda of the alliance.

In May 1994, NATO approved two milestone documents: a political framework paper structuring the broad political-military approach of the alliance to proliferation, and a three-phase work plan for the Defense Group on Proliferation (DGP) to address the defense implications of proliferation. The DGP is co-chaired by the United States and one of the European allies (currently France) on a rotating basis. Having assessed the risks posed by WMD proliferation to the alliance, the DGP will now begin work on its second phase -- grappling with the operational implications of WMD use for alliance military

capabilities. The DGP's work in assessing proliferation risks to NATO is an important part of NATO's continuing adaptation to the new security environment. While diplomatic efforts to prevent proliferation remain NATO's primary goal, NATO must also ensure that it has the range of capabilities needed to discourage WMD use and to counter, if necessary, threats to NATO populations, territory, and forces. Political-military uncertainties and future technological trends related to WMD will inform NATO's decisions today about needed future capabilities. NATO is concerned about the continuing risks of illicit transfers of WMD and related materials, growing proliferation risks on NATO's periphery, and the role of suppliers of WMD-related technology to states on NATO's periphery.

The NATO work clearly shows that the United States is not alone in its concerns for the defense dimension of proliferation. The alliance remains relevant and forward-looking on military topics central to its core mission of collective defense, and demonstrates the continued interest of the European allies in cooperative transatlantic security with the United States.

The Government of Japan also has recognized the growing danger from attacks with missiles armed with WMD warheads, the need to strengthen the defensive capabilities of U.S. and Japanese forces, and the necessity of maintaining capabilities for combined joint operations. To meet this threat, the United States and Japan are working to identify the TMD capability Japan will need and to evaluate options for acquiring that capability in future years, including opportunities for cooperative programs.

Status of the Chemical Weapons Convention

Opened for signature on January 13, 1993, the Chemical Weapons Convention (CWC) currently has 159 signatories and will enter into force 180 days following deposit of the 65th ratification with the United Nations (22 countries have 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), 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 EIF. DoD has participated actively throughout this PrepCom process, providing a full range of experts on numerous CWC implementation issues such as inspection procedures, data management, and inspector training. As mandated under the CWC, DoD will declare and destroy the U.S. chemical weapon stockpile, as well as the nonstockpile items (former production facilities, training weapons, and so forth) covered by the CWC.

Counterproliferation Education

In addition to developing a counterproliferation policy throughout the Department, work is ongoing to ensure that future senior military officers arrive at assignments well grounded in the defense implications of proliferation and DoD counterproliferation policy. In this regard, the Center for Counterproliferation Research was established at the National Defense University (NDU) in April 1994 with a mission to educate senior military officers on the new dangers from proliferation and the DoD role in responding through counterproliferation. The Center also will support policy work in the Department through research and analysis of specific proliferation threats. The Center was instrumental in developing a major international conference at NDU in November that brought the counterproliferation issues and U.S. policy to a wide audience.

STRENGTHENING NONPROLIFERATION REGIMES

The Department is continuing to tailor its contribution to important nonproliferation regimes, the primary tools to prevent acquisition of WMD and to promote roll-back of WMD programs. DoD is building on its traditionally strong participation in the negotiation of and, in some cases, leadership in the

implementation of arms control and nonproliferation regimes. While DoD shares responsibility for U.S. policy on international regimes with the State Department, Arms Control and Disarmament Agency, and others, it has unique technical and military expertise vital to making these regimes effective.

Nuclear Non-Proliferation Treaty

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 an extension conference 25 years after entry into force (1970) to decide whether the Treaty should continue in force indefinitely, or be extended for a fixed period or fixed periods. 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.

Comprehensive Test Ban Treaty

The President has directed that the United States seek to conclude negotiations in the Conference on Disarmament on a Comprehensive Test Ban Treaty (CTBT) at the earliest possible time. A CTBT will strengthen the global norm against the proliferation of nuclear weapons and constrain development of nuclear weapons capability in proliferant states and the nuclear weapon states. DoD is a key player in developing U.S. positions in the negotiations.

Biological Weapons Convention

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 will participate in the U.S. delegation to the BWC Ad Hoc Group mandated by the September 1994 BWC Special Conference and will play an important role in U.S. efforts to develop off-site and on-site measures for consideration by the Group. The United States strongly supports the development of a legally-binding protocol of such measures to strengthen the BWC.

TECHNOLOGY SECURITY AND EXPORT CONTROL

DoD's technology security program is designed to prevent the transfer of dangerous and sensitive technologies to countries that pose a threat to international security, as well as to ensure that when technology is transferred it is done in a manner that does not endanger U.S. interests or compromise its military advantages. In addition to controlling transfers of destabilizing conventional weapons and associated dual-use technologies, technology security program supports the Department's Counterproliferation Initiative by preventing transfers that would contribute to the proliferation of nuclear, biological, and chemical weapons and their delivery systems. The Department also provides support to law enforcement and intelligence agencies working in activities to prevent the unwarranted transfer of defense related goods, services, and technologies.

Inhibiting the spread of WMD technologies and countering the threats that may arise from the transfer of arms and sensitive technologies pose different challenges and require different approaches. While it is U.S. policy to prohibit and curtail the proliferation of WMD technologies, U.S. policy recognizes that the sale and export of conventional weapons and technologies is not inherently threatening or destabilizing.

In fact, appropriate exports of such weapons and technologies can be an integral tool of national security policy aimed at bolstering the security of allies and friends as well as supporting regional defense strategies (see Appendix J, Security Assistance). Such exports also serve to support efforts to maintain a strong and responsive industrial base. The United States recognizes that it is not the only supplier of conventional weapons and technology; accordingly, it seeks to harmonize its policies and export practices with other suppliers in order to deny enemies military advantages and to limit destabilizing capabilities in critical regions where tensions can lead to military conflict.

Overall, the United States will seek to maintain and strengthen controls on so-called chokepoint technologies; that is, key enabling technologies that are still produced by a limited number of states. 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 the Coordinating Committee for Multilateral Export Controls (COCOM).

Founding the COCOM Successor Regime

DoD has played a central role in negotiations designed to replace COCOM with a new export control regime that addresses the new world order. The aim is to provide transparency, responsibility, and restraint in transfer of conventional arms and sensitive dual-use technologies to countries and regions of concern including where U.S. and allied forces might face hostile military actions. The regime is intended to establish basic principles and policies among like-minded states that would be implemented on a national discretion basis. One example is the United States' desire to deny arms sales to countries of concern. The regime will enable the United States and other participating countries to better track and monitor sensitive arms and technology transfers as they occur. This will benefit DoD by providing an inventory of information on foreign military capabilities that might not otherwise be discernible. This information is important to military planning for contingencies as well as long-term R&D and weapons development efforts. Information exchange and consultation on major arms and dual-use technology transfers to regions of instability build confidence among major exporters and thereby foster greater cooperation.

This regime is designed to complement and reinforce other export control regimes, such as the NSG, the Australia Group for chemical and biological material and technology, and the MTCR. Russia and other formerly COCOM proscribed countries have been given incentives to join the regime, such as greater access to advanced technologies, provided they meet established norms of behavior. Including these countries in the regime serves as a means of promoting responsible behavior with respect to control of sensitive weapons and related technologies. This parallels other DoD efforts, such as Cooperative Threat Reduction, to address the potential for the spread of WMD, advanced conventional weapons, and associated sensitive dual-use technologies from Russia and the other states of the former Soviet Union (FSU).

Missile Technology Control Regime

The only multilateral missile nonproliferation regime, the MTCR, is a voluntary arrangement of 25 states including the United States, Canada, their major trading partners in Europe, Japan, Australia, New Zealand, Argentina, and Hungary. The United States 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 30 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 United States 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 28 industrial countries including the United States, Canada, most of Western Europe (including the European Union), Japan, New Zealand, and Australia, the Australia Group seeks 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.

OTHER TREATY ACTIVITIES

The Department has numerous responsibilities in arms control negotiation, implementation, verification, inspection and other related activities. Arms control remains one of a growing number of tools by which U.S. security can be enhanced through cooperative arrangements with other nations.

START I

On December 5, 1994, the first Strategic Arms Reduction Treaty (START I) entered into force, ushering in a new era in nuclear arms control. START I is the first accord that will actually reduce, rather than just cap, deployed strategic nuclear forces in the United States and the states of the FSU. START I requires a 50 percent reduction in FSU heavy intercontinental ballistic missiles (ICBMs), considered the most destabilizing strategic systems. START I also requires the total number of accountable warheads on each side to be reduced by over 40 percent, and the number of strategic delivery systems to be reduced by roughly one-third, from 1990 levels. The treaty further establishes an extensive notification and inspection regime to assist in verifying compliance. Moreover, as a result of the Lisbon Protocol to START I and associated documents, Belarus, Kazakhstan, and Ukraine agreed to join the Treaty on the Non-Proliferation of Nuclear Weapons as non-nuclear weapon states and committed to eliminate all nuclear weapons and strategic offensive arms from their territories within the seven-year START I reduction period. START I is thus an historic achievement that will lead to dramatic reductions in nuclear arsenals.

The history of START I spans three U.S. administrations. Negotiations began in 1982 during the Reagan Administration, with the primary goal of improving stability in the U.S.-Soviet nuclear balance while significantly reducing the level of nuclear weapons on each side. The Bush Administration concluded these negotiations, and the treaty was signed in July 1991. In the aftermath of the December 1991 disintegration of the Soviet Union, the Bush Administration negotiated with the newly independent states to make START I a multilateral treaty. These efforts culminated in the May 1992 Lisbon Protocol by which Belarus, Kazakhstan, Russia, and Ukraine became parties to START I. However, because the Russian parliament ratified START I with the condition that the treaty could not enter into force until the other three former Soviet states had acceded to NPT as non-nuclear weapon states, START I entry into force was delayed. During the following two years, the Clinton Administration encouraged these states to join NPT as quickly as possible. A major achievement in this regard was the January 1994 Trilateral Statement signed by Russia, Ukraine, and the United States, in which Ukraine agreed to transfer all nuclear warheads on its territory to Russia for dismantlement in exchange for fuel assemblies for Ukrainian nuclear power stations. Also as part of this statement, the United States and Russia agreed to

provide security assurances to Ukraine once Ukraine acceded to NPT and START I entered into force. The Ukrainian parliament's vote to accede to NPT in November 1994, along with earlier accessions by Belarus and Kazakhstan, allowed the five START I parties to exchange instruments of ratification in December 1994 and thus bring the treaty officially into force.

The significance of START I extends beyond the treaty itself, however, since START I laid the groundwork for additional measures to reduce nuclear weapons. The Presidential Nuclear Initiatives of September 1991 and January 1992, which the Soviet Union and Russia reciprocated to a degree, greatly reduced deployments of nonstrategic nuclear weapons and curtailed modernization of strategic nuclear forces. Moreover, the second Strategic Arms Reduction Treaty (START II), which requires even more far-reaching cuts in U.S. and Russian nuclear arsenals, built upon the existing provisions of START I.

START II

In January 1993, the United States and Russia signed START II, which calls for the most sweeping nuclear arms reductions in history. The treaty requires elimination of destabilizing strategic systems -- heavy and multiple-warhead ICBMs -- and requires each side to reduce its deployed strategic nuclear warheads to a level of 3,000-3,500. As a result, deployed strategic forces will be reduced by about two-thirds from pre-START I levels. All reductions and eliminations must be completed no later than January 1, 2003.

In part because START II is based largely on START I, it was possible to negotiate the former in less than one year. However, since START II relies on START I for many implementing provisions, including the verification regime, START II could not enter into force without START I being in effect. The recent entry into force of START I thus opens the way for ratification and entry into force of START II. This was anticipated at the September 1994 U.S.-Russia summit, where Presidents Clinton and Yeltsin stated their intention to seek early ratification of START II (once START I had entered into force) and expressed their desire to exchange instruments of ratification, thus enabling START II to enter into force, at the next U.S.-Russia summit in 1995. The Presidents also agreed to pursue early deactivation of systems to be eliminated under START II, once it enters into force, as a way to enjoy the security benefits of the Treaty at an early date.

Conventional Forces in Europe

The Department of Defense continues to play a very active role in the verification and compliance activities associated with the Treaty on Conventional Forces in Europe (CFE). 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 1994, the On-Site Inspection Agency (OSIA) participated in over 120 inspections under the Treaty in states of the former Warsaw Pact and escorted foreign teams during five inspections of U.S. forces in Europe.

Open Skies

DoD is also continuing preparations for implementation of the Open Skies Treaty. The Treaty will permit participating states to overfly other parties and collect photographic and other specified data, thereby strengthening stability and cooperative security through increased openness and transparency. The U.S. Open Skies aircraft, operated by the Air Force and staffed by OSIA have participated in 15 trial flights in 1994, over half including foreign participants.

On-Site Inspection Agency Activities

The On-Site Inspection Agency (OSIA) is a joint-Service DoD organization responsible for U.S. readiness and implementation of inspection, escort, and monitoring requirements under the verification provisions of arms control treaties and agreements. OSIA was formed in January 1988 by Presidential Directive to implement the Intermediate-Range Nuclear Forces (INF) Treaty.

Under the CFE Treaty, OSIA inspectors have conducted over 130 inspections and, with the support of NATO allies, witnessed the destruction of thousands of pieces of combat equipment -- tanks, armored combat vehicles, aircraft, and artillery. Short notice inspections at Russian and U.S. chemical weapons storage, production, and development facilities under the Wyoming Memorandum of Understanding were completed in late 1994. OSIA will also support implementation of the Bilateral Destruction Agreement.

The Open Skies Treaty establishes aerial observation rights among the 27 signatories. When it enters into force, OSIA will lead and manage U.S. teams performing observation duties in Air Force modified weather reconnaissance aircraft (OC-135B) equipped with optical, video, infrared, and synthetic aperture radar sensors. OSIA will escort foreign teams flying over the United States.

Preparations for implementation of START I and II have been thorough. Agency personnel have conducted roughly 200 mock inspections of 35 Army, Navy, and Air Force facilities, including submarine, intercontinental ballistic missile, and heavy bomber sites since early 1991. Personnel and equipment are ready to deploy to Pavlograd, Ukraine, to implement START monitoring provisions.

OSIA is the executive agent for DoD support to the United Nations Special Commission on Iraq (UNSCOM), pursuant to U.N. Resolutions 687 and 715. OSIA has the authority to task the DoD components to procure or provide DoD unique equipment, services, facilities, and personnel in support of the UNSCOM for the purpose of eliminating Iraq's capabilities, vis-a-vis WMD and ballistic missiles with a range greater than 150 kilometers. Another goal of UNSCOM is to ensure Iraq does not reacquire these capabilities.

OSIA is tasked with the Defense Treaty Inspection Readiness Program (DTIRP). A security and intelligence countermeasures program, DTIRP provides arms control security awareness training and services designed to ensure that onsite inspections of U.S. industrial facilities and military installations do not result in foreign access to nontreaty relevant information.

OSIA has been called upon to provide team leadership and inspection expertise in the latest bilateral agreements between the United States and Russia involving mutual reciprocal inspections of nuclear warhead components. This emerging agreement continues the trend of cooperation between both nations in safeguarding and providing transparency for nuclear components.

Finally, OSIA assists in the implementation of the Cooperative Threat Reduction Program. OSIA personnel receive, escort, and assist in the delivery of CTR equipment in-country; act as experienced linguists; and conduct audit and examination activities to confirm that equipment sent to CTR recipients is used for its intended purposes.

CONCLUSION

DoD's Counterproliferation Initiative has begun to influence the day-to-day business of the Department and its contribution to U.S. policy on the proliferation of WMD. The policy guidance and goals are clear -- preventing proliferation and protecting U.S. forces, vital interests, allies, and homeland from opponents with WMD and missile capabilities. But there are many challenges ahead. In the coming year, DoD will continue to develop and implement its strategy for new military capabilities to deal with the proliferation threat. The Department is committed to tailoring its unique contribution of military and technical expertise to the negotiation and implementation of nonproliferation regimes.

NUCLEAR POSTURE REVIEW

INTRODUCTION

The Nuclear Posture Review (NPR) represents the nuclear analog to the Bottom-Up Review of conventional forces, undertaken in 1993 to address the significant changes in the security environment which face the United States, and the military consequences of those changes. The NPR was the first review of nuclear policy in the post-Cold War world, the first such review in 15 years, and the first review ever to include policy, doctrine, force structure, command and control, operations, supporting infrastructure, safety, security, and arms control. The decisions made in the NPR process allow DoD to put its nuclear programs on a stable footing after several years of rapid change in the international environment and in DoD's forces and programs, and at the threshold of a decade of further reductions called for by the START I and START II agreements.

Five basic themes of U.S. nuclear strategy emerged from the Nuclear Posture Review:

- First, nuclear weapons are playing a smaller role in U.S. security than at any other time in the nuclear age. This fact served as a point of departure for the rest of the review. The Bottom-Up Review and the Counterproliferation Initiative (CPI) are designed to achieve and protect U.S. conventional superiority wherever American defense commitments require it.
- The second principal finding is that the United States requires a much smaller nuclear arsenal under present circumstances. Dramatic reductions in U.S. (and, when implemented, former Soviet) forces from Cold War levels are underway.
- Third, although the security environment has changed dramatically since the end of the Cold War, there is still great uncertainty about the future, particularly in the New Independent States where the process of denuclearization and reduction is underway but by no means completed. The United States must provide a hedge against this uncertainty. Therefore, the NPR stresses prudence in the face of potential risks while also identifying some new policy departures that reflect changes in the security environment.
- Fourth, the United States does not have a purely national deterrent posture; it extends the deterrent protection of its nuclear arsenal to its allies. A very progressive aspect of U.S. nuclear posture is that it is, in part, an international nuclear posture. The NPR strongly supports continued commitment to NATO and Pacific allies.
- Finally, the United States will continue to set the highest international standards of stewardship for nuclear safety and security, command and control, use control, and civilian control.

PROCESS

The Nuclear Posture Review was chartered in October 1993 to determine what the role of nuclear weapons in U.S. security strategy should be. A 10-month DoD collaborative effort, the NPR was co-chaired by the Office of the Secretary of Defense (OSD) and the Joint Staff. Working groups were comprised of representatives from OSD, the Joint Staff, the Services, and the unified commands. The Deputy Secretary of Defense and the Vice Chairman of the Joint Chiefs of Staff reviewed and directed the progress of the NPR through issue briefs and the development of a final report, which was presented to the Secretary of Defense and the Chairman of the Joint Chiefs of Staff. Some decisions relating to the NPR were raised through the interagency process, including all relevant agencies of the U.S. government, which had the opportunity to review a wide range of options. The President approved the recommendations of the NPR on September 18, 1994.

ROLE OF NUCLEAR WEAPONS IN U.S. SECURITY

The U.S. National Security Strategy states: "We will retain strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against our vital interests and to convince it that seeking a nuclear advantage would be futile. Therefore we will continue to maintain nuclear forces of sufficient size and capability to hold at risk a broad range of assets valued by such political and military leaders." Recent international upheavals have not changed the calculation that nuclear weapons remain an essential part of American military power. Concepts of deterrence and survivability must adapt to the new international environment, yet continue to be central to the U.S. nuclear posture. Thus, the United States will continue to threaten retaliation, including nuclear retaliation, and to deter aggression against the United States, U.S. forces, and U.S. allies.

Alliance relationships are an important element of U.S. security. Through forward basing and power projection capabilities, overseas U.S. military presence -- including nuclear capabilities -- helped promote regional stability, avert crises, and deter war. In recent years, there has been a dramatic reduction in both the overall size of the U.S. military presence abroad and in the nuclear capabilities deployed overseas. Yet maintaining U.S. nuclear commitments with NATO, and retaining the ability to deploy nuclear capabilities to meet various regional contingencies, continues to be an important means for deterring aggression, protecting and promoting U.S. interests, reassuring allies and friends, and preventing proliferation. Although nuclear capabilities are now a far smaller part of the routine U.S. international presence, they remain an important element in the array of military capabilities that the United States can bring to bear, either independently or in concert with allies to deter war, or should deterrence fail, to defeat aggression. Thus, the United States continues to extend deterrence to U.S. allies and friends.

CONTEXT: LEAD BUT HEDGE

The Nuclear Posture Review considered the size and role of U.S. nuclear forces in a world in which the proliferation of nuclear weapons and other weapons of mass destruction, rather than the nuclear arsenal of a hostile superpower, poses the greatest security risk. One goal for the NPR was to demonstrate U.S. leadership in responding to that risk. Major reductions in U.S. nuclear weapons are already underway, confirming the U.S. commitment to a smaller international role for nuclear weapons. Since 1988, the United States has reduced its nuclear arsenal by 59 percent, and either eliminated, truncated, or never fielded over 15 nuclear weapons systems. The United States has no new nuclear weapons programs, and has committed to achieving a Comprehensive Test Ban Treaty, extending its testing moratorium in the interim. Program changes of this magnitude help set an example of decreasing dependence on nuclear weapons for military purposes.

U.S. nuclear weapons were for years justified by the potential for a massive conventional attack by the Warsaw Pact through the Fulda Gap which would overwhelm NATO conventional forces. The decisions of the members of the Warsaw Pact to dissolve their alliance and the subsequent transformation of the Soviet Union into independent states removed this potential threat. No equivalent threat to American vital interests can be identified in the post-Cold War era, and for very few of the existing threats are nuclear weapons appropriate responses. The NPR sought to adjust and reduce strategic programs to reflect actual U.S. needs, thereby setting an example for other nuclear powers to consider post-Cold War adjustments of their own.

Moreover, the CPI has as its central tenet the creation and furtherance of conventional responses to the threat or use of weapons of mass destruction. Far from inventing new roles for nuclear weapons in countering WMD, the NPR supports the CPI, because in a potential case of WMD threat or use, senior political and military leaders must have a wide range of responses -- especially non-nuclear -- from which to choose. Having the conventional capability to respond to WMD threat or use further reduces U.S. dependence on nuclear weapons.

These realities make the indefinite extension of the Nuclear Non-Proliferation Treaty (NPT) all the more important. A failure to codify the reduced role of nuclear weapons in nations' security could result in the creation of additional nuclear powers -- a clear reduction in the security of all nations. The Posture

Review sought to demonstrate American leadership by reducing the role of nuclear weapons in U.S. security. The combination of the large negotiated reductions embodied in the START I and START II treaties and the further unilateral reductions recommended by the NPR makes tangible the U.S. commitment to Article 6 of the NPT, which calls for the nuclear powers to take steps to reduce their arsenals. Once START II has been ratified, further negotiated reductions can be considered. The notion, however, that nations are motivated by U.S. nuclear forces in making decisions about acquiring nuclear weapons themselves is simply not valid. Potential proliferators are more likely to be driven by concerns about neighbors' capabilities or the desire for prestige or regional hegemony than by decisions America makes about its nuclear arsenal. Extending the NPT indefinitely will therefore do far more to improve individual nations' security than would further declines in superpower weapons stocks.

A major focus of the Nuclear Posture Review was nonstrategic nuclear forces (NSNF) and safety, security, and use control. The United States decided in the NPR to completely eliminate two out of its five types of NSNF, and to augment several aspects of nuclear safety and security. These efforts were discussed with Russian civilian and military leaders in the hope that they would take similar measures to reduce NSNF and improve nuclear safety, security, and use control. The United States is prepared, under the Cooperative Threat Reduction program, to cooperate with and support Russia in these endeavors.

Both the United States and the states of the former Soviet Union have acted quickly and responsibly to ease Cold War tensions. Both sides have decreased their nuclear stockpiles and are eliminating the weapons which most undermine stability. U.S. and Russian weapons have been de-targeted so that they are no longer aimed at any country. With U.S. help and financial aid, Russia is moving in the direction of economic reform and working to consolidate the nuclear arsenal that belonged to the Soviet Union.

These policies have not eliminated the threat posed by the weapons of the former Soviet Union, however. START I has just entered into force; START II has not been ratified by either the United States or Russia. Even after achieving the full reductions called for by both treaties, each side will retain up to 3,500 warheads on strategic offensive systems. While political relations with Russia have changed dramatically in recent years, the United States must retain a nuclear capability adequate to respond to any challenge. Further, most of the strategic nuclear weapons remaining in the former Soviet Union still are deployed and capable of attacking targets in the United States. Russia remains the focus of the Posture Review not because its intentions are hostile, but because it controls the only nuclear arsenal that can physically threaten the survivability of U.S. nuclear forces.

A significant shift in the Russian government into the hands of arch-conservatives could restore the strategic nuclear threat to the United States literally overnight. The removal of weapons located on the territory of Ukraine, Kazakhstan, and Belarus is still incomplete. Other nations not allied with the United States either have declared nuclear arsenals or are capable of developing them. With this kind of instability and uncertainty, the United States must maintain nuclear weapons necessary to deter any possible threat or to respond to aggression, should deterrence fail.

The NPR called for an affordable hedge in which the approved force structure could support weapons levels greater than those called for under START II should major geostrategic changes demand it. This lead and hedge theme reflects the pragmatic partnership between the United States and Russia, in which the United States seeks both to cooperate with Russia wherever such cooperation is possible, and to prepare realistically for possible tensions or disruptions of that relationship.

REDUCTIONS IN U.S. NUCLEAR POSTURE

The deep reductions in nonstrategic and strategic nuclear weapons that have been underway for several years and will continue under START I and START II are clear evidence that the United States is reducing the role that nuclear weapons play in its military posture. Throughout the last several years, nuclear targeting and war planning have undergone several reviews and adjustments to account for the decline of the Warsaw Pact and the Soviet breakup, and will continue to change in response to further

developments in international affairs. In fact, there have been significant changes in the U.S. nuclear posture since the end of the Cold War:

- There are no nuclear weapons in the custody of U.S. ground forces.
- Naval NSNF are no longer deployed at sea.
- Strategic bombers have been taken off day-to-day alert.
- The total U.S. active warhead stockpile has been reduced by 59 percent (79 percent by 2003). Deployed strategic warheads have been reduced by 47 percent (71 percent by 2003, when START I and II are implemented).
- NSNF weapons have been cut by 90 percent, and the NATO stockpile has been cut by 91 percent.
- Nuclear weapons storage locations have been reduced by over 75 percent.
- The number of personnel with access to nuclear weapons has been cut by 70 percent.

The Department also is reducing substantially the worldwide airborne command post fleet -- reflecting the decline in the likelihood of a superpower confrontation.

Since 1989, the programmatic implications of START I and II, and the two earlier Presidential Nuclear Initiatives on U.S. nuclear programs, also have been quite substantial. Program terminations, or systems that were developed but never became operational, include the small intercontinental ballistic missile (ICBM), Peacekeeper rail garrison, Lance follow-on, New Artillery Fired Atomic Projectile, Tactical Air to Surface Missile and Short Range Attack Missile II. Other programs were truncated, that is systems were either fielded in fewer numbers than originally envisioned or, in the case of the B-1, will be converted to conventional-only usage. These truncations include Peacekeeper, B-2, B-1 (which will drop its nuclear role), Advanced Cruise Missile, and the W-88 warhead. There are also a number of nuclear systems that were retired from service and never replaced; these include the Artillery Fired Atomic Projectile, FB-111, Minuteman II, Lance, Short Range Attack Missile-A, Nuclear Depth Bomb, and C-3/C-4 Backfit nuclear-powered ballistic missile submarines (SSBN). In all, spending on strategic nuclear forces, in constant 1994 dollars, dropped from $47.8 billion in 1984 to $13.5 billion in 1994, or 14.0 percent and 5.3 percent, respectively.

STRATEGIC NUCLEAR FORCES

Two basic requirements necessarily guide U.S. planning for strategic nuclear forces: 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 currently positive trends. The Department must hedge against uncertainties while recognizing that no new nuclear systems are under development.

The NPR examined a wide variety of options for strategic nuclear force structures, ranging from ones which increased platforms over those previously planned, to a minimal force that eliminated ICBMs and reduced the number of SSBNs to 10. The Review examined what force levels were needed to handle the most stressing case that could develop -- deterring a hostile Russia. The President approved the NPR's recommended strategic nuclear force posture as the U.S. START II force. This force will maintain flexibility to reconstitute or reduce further and assumes that Russia ratifies and implements START II. At this level, the United States would have adequate weapons to:

- Deter a hostile Russian government by holding at risk a range of assets valued by its political and military leaders.
- Maintain a strategic reserve force to ensure continued deterrence of other nuclear powers.
- Account for weapons on systems which are not available due to maintenance and overhaul.

The NPR did not change the total number of warheads the United States planned to retain under START II. However, the Review did identify ways to streamline forces by reducing the number of platforms

carrying these warheads. As a result of the NPR, U.S. strategic nuclear force structure will be adjusted to comprise:

- 14 Trident submarines -- four fewer than previously planned -- carrying 24 D-5 missiles, each with five warheads, per submarine. This will require backfitting four Trident SSBNs, currently carrying the Trident I (C- 4) missile, with the more modern and capable D-5 missile system.
- 66 B-52 bombers -- down from 94 planned in 1993 -- carrying air-launched cruise missiles (AGM-86B) and advanced cruise missiles (AGM-129).
- 20 B-2 bombers -- the same number previously envisioned -- carrying gravity bombs.
- 450/500 Minuteman III missiles, each carrying a single warhead.

In addition, no new strategic nuclear systems are either under development or planned.

The NPR re-examined the concept of a triad of ICBMs, submarine-launched ballistic missiles (SLBMs), and bombers as the basis for a strategic deterrent and determined it remains valid for a START II-size force. Today, the United States relies on fewer types of nuclear weapon systems than in the past. Hedging against system failure of a leg of a triad -- either because of technical failure of a delivery platform or warhead, or technological breakthroughs by potential adversaries -- is a primary reason to retain a triad. Each leg also has unique characteristics and specific advantages.

SLBMs

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. Because of this increased reliance on the SLBM force and the continued need for survivable weapons to enhance stability, the NPR determined that the conversion of four submarines to carry the more modern D-5 missile was appropriate. Conversion of these four submarines from the older C-4 missile ensures that the U.S. force can remain intact without danger of age-related problems crippling missiles that would carry 40 percent of SLBM warheads.

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. In order to have adequate, survivable, at-sea weapons to support deterrence, accountable SLBM warhead levels need to be maintained close to the START II limit of 1,750. With the 14 SSBN option selected by the NPR, the United States will retain a significant capability to hedge against a failure of the START II Treaty or unforeseen changes in the world, because the D-5 missile loaded on the Tridents will carry fewer warheads than the maximum allowed by START Treaty limits. The 14 boat force also maintains the security of two-ocean basing, further enhancing operational effectiveness and stability.

ICBMs

ICBMs provide the United States a prompt-response capability. START II requires the downloading of ICBMs to one warhead, but does not place a sublimit on the total number of single-warhead ICBMs. Approximately 500 Minuteman IIIs will be retained and downloaded to one warhead apiece. ICBMs also increase the cost ratio to an adversary of attempting a first strike. Retaining approximately 500 single-warhead Minuteman IIIs provides for a reduced but prudent ICBM force.

Bombers

There is no START II sublimit on the number of bombers. Because bombers are dual-capable, they fulfill two important functions: they serve as an integral part of the U.S. nuclear deterrent, providing a hedge against a catastrophic failure of either the SSBN or ICBM leg of the triad, and they provide an important

conventional capability in MRCs; 100 bombers in a conventional role are tasked for MRCs. Retaining 66 B-52s and 20 B-2s will allow the bombers to serve these functions.

NONSTRATEGIC NUCLEAR FORCES

The Nuclear Posture Review affirms that the United States has not only a national deterrent posture, but an international nuclear posture. Indeed, the United States extends the deterrent protection of its nuclear arsenal to its allies. Nowhere is this more evident than in the area of NSNF, which are not covered by START I and START II. For nearly 50 years, the United States has maintained a sizable military presence in regions deemed vital to American national interests.

Alliance commitments and the unique characteristics of nonstrategic nuclear forces were primary considerations in the NPR's consideration of what the NSNF force structure should be. The Nuclear Posture Review considered numerous options, ranging from one more robust than today's structure to elimination of NSNF entirely. As a result of the NPR, the following decisions were made regarding U.S. nonstrategic nuclear force structure:

- Eliminate the option to deploy nuclear weapons on carrier-based, dual-capable aircraft.
- Eliminate the option to carry nuclear Tomahawk cruise missiles (TLAM/N) on surface ships.
- Retain the option to deploy TLAM/N on attack submarines (although none are currently deployed, they could be deployed if needed).
- Retain the current commitment to NATO of dual-capable aircraft based in Europe and CONUS and the deployment of nuclear weapons (gravity bombs) in Europe.

These NSNF decisions have the effect of permanently eliminating the capability to deploy nuclear weapons on naval surface ships -- a step that could encourage the Russians to reciprocate -- while maintaining a nonstrategic nuclear force capable of fulfilling U.S. commitments to allies.

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

Nuclear-related command, control, communications, and intelligence (C^3I) and operations have undergone dramatic changes since the end of the Cold War. For example:

- Strategic bombers are off alert.
- ICBMs and SLBMs have been de-targeted.
- U.S. command post structure has been reduced.
- The operating tempo of the worldwide airborne command post structure has been reduced. The National Emergency Command Post, formerly used only for a nuclear role, is now the National Airborne Operation Center and is available to the Federal Emergency Management Agency for civil emergencies.
- Systems endurability requirements have been reduced by two-thirds.
- The C^3I portion of the DoD strategic nuclear budget has been reduced from $3.4 billion to $2.1 billion.

Nevertheless, to maintain viability, the C^3I structure must maintain capability to carry out key missions: early warning; threat assessment; connectivity of the National Command Authority; dissemination of emergency action messages for the launch of nuclear forces, if necessary; and safe, secure force management. With these considerations in mind, the NPR made the following decisions regarding strategic C^3I:

- Continue adequate funding of critical programs.
- Correct existing/projected communication system and tactical warning/attack assessment deficiencies.

- Support intelligence systems which provide timely information and threat characterization and warning indicators.

INFRASTRUCTURE

In order to maintain a streamlined and adjusted nuclear posture, DoD must sustain the infrastructure to support U.S. nuclear forces. The Nuclear Posture Review focused its examination of the nuclear infrastructure on two key areas: the industrial base for strategic missiles, reentry systems, and guidance, as well as for bombers; and support by the Department of Energy (DOE), which is responsible for producing and maintaining nuclear weapons for the Department's systems. The NPR made the following infrastructure recommendations:

- Replace the guidance system and re-motor those Minuteman IIIs which are retained.
- Continue D-5 production past 1995 to maintain the strategic ballistic missile industrial base (this is a secondary advantage of backfitting the 14 SSBNs to be retained with the D-5 missile).
- Fund the sustainment of the guidance and reentry vehicle industrial base.
- With regard to bomber infrastructure, no specific funding was found to be necessary, since Stealth and commercial aircraft should keep the industrial base healthy.
- Provide the Department of Energy -- the supplier of nuclear weapons -- with DoD's requirements:
    - Maintain nuclear weapon capability (without underground nuclear testing).
    - Develop a stockpile surveillance engineering base.
    - Demonstrate the capability to refabricate and certify weapon types in the enduring stockpile.
    - Maintain the capability to design, fabricate, and certify new warheads.
    - Maintain a science and technology base needed to support nuclear weapons.
    - With regard to the tritium supply to support weapons (as specified annually by the Department of Defense in its Nuclear Weapons Stockpile Memorandum), DoD and DOE must decide on a source and a production program. In order to have an upload hedge in case events require it, an accelerated decision will be needed.
    - No new-design nuclear warhead production is required.

SAFETY, SECURITY, AND USE CONTROL

The safety, security, and use controls of nuclear weapons are the solemn responsibility of those nations which possess them. The United States sets the highest international standards for the safety, security, and responsible custodianship of its nuclear arsenal. The dramatic force reductions which already have taken place since the end of the Cold War -- U.S. strategic warheads have been cut by 59 percent since 1988; nonstrategic nuclear forces have been cut by 90 percent -- have contributed greatly to the increased safety and security of U.S. nuclear weapons. As a result of these reductions, nuclear storage sites have been reduced by 75 percent. The Nuclear Posture Review concerned itself with maintaining the U.S. lead role in nuclear safety and security issues.

The NPR thoroughly reviewed the recommendations of the Fail-Safe and Risk Reduction (FARR) Commission of 1992 and determined that the vast majority of them had been implemented or were well underway. Among the FARR recommendations the NPR singled out for continued implementation were:

- Completing the Trident Coded Control Device (CCD) in 1997, providing for system-level CCDs or permissive action links (PALs) on all U.S. nuclear weapons by 1997.
- Seeking alternatives to those recommendations that a test moratorium may preclude (for example, protection equivalent to Category F PAL on all new weapons).

The Department of Defense also will re-institute a regular and realistic nuclear procedures exercise program, with participation by senior DoD civilian and military leadership, to ensure thorough understanding of nuclear procedures by this nation's nuclear stewards.

THREAT REDUCTION AND COUNTERPROLIFERATION INITIATIVES

The Nuclear Posture Review made adjustments to the U.S. nuclear posture unilaterally. They are consistent with, but are not required by, any new arms control agreements. There remains hope for Russia to undertake a comparable review, and to make similar adjustments in its strategic force plans, nonstrategic force plans, and ways of ensuring safety, security, and use control. When President Yeltsin came to Washington to meet with President Clinton in September 1994, they had the opportunity to discuss these adjustments, which were made possible in great measure by the new security relationship with Russia -- pragmatic partnership.

At the Summit, the Presidents made important progress on a number of arms control issues and, in fact, took steps down the road of further reductions and increased cooperation on nuclear issues. The Presidents confirmed their intention to seek early ratification of the START II Treaty, once the START I Treaty enters into force, and expressed their desire to exchange START II instruments of ratification at the next U.S.-Russia Summit meeting. Once START II is ratified, the Presidents agreed to begin immediately to deactivate all strategic delivery systems to be eliminated under START II. The Presidents also instructed their experts to intensify their dialogue to compare conceptual approaches and to develop concrete steps to adapt the nuclear forces and practices on both sides to the changed international security environment, including the possibility, after ratification of START II, of further reductions and limitations on remaining nuclear forces.

In this uncertain environment, traditional arms control concerns of the past are augmented by the more urgent issues of security and control of key elements of the nuclear complex, particularly the warhead, warhead component, and weapon fissile material stockpiles. The potential for loss or theft of fissile material or nondeployed nuclear warheads is a real risk to U.S. security. As such, there is merit in exploring, together with the Russians and others, initiatives that would reduce this risk.

CONCLUSION

In the Nuclear Posture Review, the Department of Defense has struck a prudent balance between leading the way to a safer world and hedging against the unexpected. In the post-Cold War environment, the United States continues to require a nuclear deterrent. The strategic triad has been streamlined and adjusted, as have nonstrategic nuclear forces, to account for the reduced role nuclear weapons play in U.S. national security. Major force reductions and cost savings are already underway, leading to a smaller, safer, and more secure U.S. nuclear force.

ECONOMIC SECURITY -- NEW WAYS OF DOING BUSINESS AT DEFENSE

INTRODUCTION

The end of the Cold War has brought dramatic changes to the Department of Defense's relationship with the national and world economies. With changes in military missions and sharp reductions in defense spending, the Department must rely on the broader commercial world. Defense can no longer rely solely upon defense-unique industries and capabilities to equip its forces. Economic security has become a vital issue for the Department in recognition that a strong military requires a robust commercial and defense industry.

The Department is determined to respond effectively to this new environment and is adjusting its policies accordingly. It has initiated new ways of doing business with the business community, with other governments, and in its own operations. In each case, DoD is changing policies and programs to ensure both national and economic security and guarantee that the military continues to be ready for meeting future threats.

DOD -- A SMALLER CUSTOMER, CHANGING NEEDS

During the Cold War, DoD developed leading-edge technologies and industrial capabilities to meet Defense's unique requirements. Any commercial applications were incidental to meeting national security needs.

Today, the Department finds itself in an entirely new environment. First, it is a smaller customer. Defense budgets have declined dramatically in recent years. Second, many leading-edge technologies that will be critical to success on future battlefields (electronics, computers, information processing, and communications) come from the commercial sectors of the economy.

As a result, the Department can no longer afford to rely solely upon defense-unique capabilities. To continue to provide the armed forces with the most technologically advanced systems in the world, the Department increasingly must rely on commercial or dual-use technologies, products, and processes. In developing new systems, DoD must look to commercial markets. The Department will develop military-unique capabilities only after it has determined that commercial capabilities will not meet its requirements. Commercial markets are international by nature. Therefore, as the Department turns towards commercial industry, it will necessarily draw upon resources from international suppliers and will seek greater international cooperation with its allies and friends.

THE DEFENSE INDUSTRY RESTRUCTURES

Although reductions in the defense budget have sharply reduced defense industry sales, defense contractors have generally remained profitable, in part by restructuring and consolidating. Restructuring and consolidation are normal and traditional business responses to declining demand. Industrial restructuring often includes reducing the size of factories, closing some factories that are no longer needed, merging divisions and operations, and cutting corporate workforces. Recent examples of industry consolidation include Northrop merging with Grumman and Loral's purchase of IBM's Federal Systems. These steps result in short-term costs for the companies, but much greater long-term operating and overhead savings. The final result is lower costs to DoD.

DEFENSE RESPONDS -- NEW WAYS OF DOING BUSINESS WITH BUSINESS

DoD recently submitted to Congress a report describing its processes for addressing industrial issues and identifying progress that has been made to date. The report, entitled *Industrial Capabilities for Defense,* analyzes the changed environment for Defense, and discusses the Department's new efforts to respond accordingly. Key findings in the report focus on:

- Achieving acquisition reform.
- Increasing the emphasis on dual-use and commercial technologies.
- Encouraging rationalization of the defense industry.
- Recognizing commercial imperatives.
- Improving communication with the business community.

Achieving Acquisition Reform

The Department's efforts to realign the acquisition process to reduce the use of military-unique specifications and standards and to rely more heavily on commercial technologies, manufacturing processes, goods, and services are an integral part of its strategy to adjust to the post-Cold War era. These efforts are described in detail in the chapter on Acquisition Reform.

Taking Advantage of Commercial and Dual-Use Products and Processes

An essential issue discussed in the industrial capabilities report is the Administration's dual-use technology policy. The fundamental objectives are:

- To break down the barriers between the commercial and defense industries.
- To realize the benefits of civil-military integration in both research and development (R&D) and manufacturing.
- To increase the pace of innovation in defense systems.
- To reduce the cost of such systems.

The strategy for achieving these objectives consists of three pillars: insertion of commercial technology into defense systems, integration of defense and commercial production, and increased R&D of dual-use technologies.

The Flat Panel Display (FPD) Initiative is an example of the dual-use technology policy at work. Its goals are to support research and development of FPDs for defense use, to encourage U.S. industry investment, and to foster market development. DoD has made substantial investments in FPD technology over the last five years, and implementation of the initiative will help ensure that the U.S. FPD production base becomes a stable, reliable industrial asset serving both the Department and commercial markets providing early, assured, affordable access to this vital technology for meeting defense needs.

Another example is the National Shipbuilding Initiative (NSI). The NSI's objective is to ensure near-term commercial survival in the international shipbuilding market and long-term industry viability with continuous product and process improvement. The NSI is achieving these objectives by removing unnecessary regulatory barriers, offering R&D resources, and providing financing to domestic shipbuilders. Finally, the Department is issuing an overall Dual-Use Technology Plan which outlines and guides the process for identifying critical dual-use areas, analyzing critical technological and industrial issues in these areas, and formulating and implementing specific action plans.

Encouraging Industry Restructuring

The Department must encourage much needed rationalization in the defense industry. Nonetheless, while consolidations and restructuring may create efficiencies that benefit the Department, they also pose challenges that require DoD's active attention and involvement.

Consolidation entails the risk that DoD will lose the competition that encourages defense suppliers to reduce costs, improve quality, and stimulate innovation. Therefore, DoD is improving its review of proposed mergers, acquisitions, and joint ventures to ensure full consideration of the tradeoffs and risks involved. Over the last 20 years, DoD has not actively participated in antitrust reviews carried out by the Federal Trade Commission (FTC) and the Antitrust Division of the Department of Justice, and did not

take formal positions supporting or opposing mergers. Given recent changes in the defense industry, the Department is committed to playing a more active role.

In 1993, the Department chartered the Defense Science Board Task Force on Antitrust Aspects of Defense Industry Consolidation to advise the Department on how to meet these challenges effectively. The Task Force, which issued its report in April 1994, concluded that while competition among firms in the defense industry is significantly different from competition among firms in other sectors of the economy, the current Antitrust Merger Guidelines are flexible enough to take the special circumstances of defense industry downsizing into consideration.

DoD is committed to developing its own views concerning the national security implications and competitive aspects of selected transactions, and to communicating those views more effectively to the Justice Department and the FTC. The recent letter from the Deputy Secretary of Defense to the FTC on the proposed merger of the Lockheed Corporation and the Martin-Marietta Corporation illustrates the extensive assessments that the Department will undertake. DoD's concerns include cost savings; preservation of essential research, development, and production capabilities; preservation of a core of skilled personnel; and assurance of efficiency and quality within the defense industry.

Although restructuring and consolidation can save the Department and U.S. taxpayers billions of dollars, in some instances they will first require the Department to share in restructuring costs. The Department is establishing procedures to allow such costs if they will produce savings for Defense and the U.S. taxpayer. These costs are not allowed unless and until the Department determines that the benefit to U.S. taxpayers outweighs the expense. Not allowing companies to be reimbursed for restructuring costs would discourage them from undertaking restructuring efforts at all, which would result in higher costs to DoD and thus to U.S. taxpayers.

Recognizing Commercial Imperatives

The Department recognizes that changes in both U.S. national security posture and economic position require a fresh look at the commercial requirements of defense suppliers. One example is in export control regimes and processes. In 1993, the Administration led the effort to establish higher thresholds for export controls on computer products due to the advances in technical performance that had become commonplace in this rapidly changing industry. The lower threshold did not contribute to U.S. security, because computer systems with these levels of performance had become available worldwide, while the low level of control thresholds impaired U.S. exports in this industry. In 1994, working with the Departments of State and Commerce, DoD helped develop an Administration proposal to amend the Export Administration Act and improve and streamline the export control process as a whole. DoD is also an active participant in the Administration's ongoing review of conventional arms transfer policies. In each instance, the Department is working to reconcile and integrate economic and industrial concerns with its long-standing goal of preventing weapons proliferation.

A New Dialogue -- Better Communication with the Business Community

The Department is striving to enhance communication with the business community. DoD requires a better understanding of industry's views to ensure that it continues to supply the armed forces with military systems of unquestioned technological superiority during this period of dramatic changes.

To this end, DoD has revised and restructured the Defense Policy Advisory Committee on Trade. DoD has also drawn on the capabilities of the Defense Science Board to provide advice on defense business issues. Finally, the Department is committed to more consultation with industry, through both formal and informal channels.

RECOGNIZING ESSENTIAL INDUSTRIAL CAPABILITIES

While the Department recognizes the need to change the way it conducts business, it will be careful not to allow the loss of essential capabilities in the process. DoD is developing the ability to identify, analyze,

and when necessary, act to preserve essential capabilities. These include specialized equipment and facilities, skills, and technological knowledge. Some capabilities required for national defense are defense-unique -- they have no commercial counterparts and must depend upon defense markets for survival (for example, building nuclear-powered submarines and the production of most ammunition). As procurement shrinks, DoD must take appropriate action to ensure the preservation of key industrial base sectors.

For several years, DoD has been concerned with the effect of reduced defense procurements upon essential industrial capabilities. In cases where essential capabilities were threatened with unacceptable risks, DoD has taken action. Maintaining production of SSN- 21 Seawolf and development of the New Attack Submarine and upgrading the Abrams main battle tank to the M1A2 configuration are prime examples of such actions. DoD will continue to take action when necessary.

However, DoD neither can nor should seek to preserve every company that supplies defense. The Department's goal must be to preserve capabilities. Many suppliers, faced with smaller orders, have claimed that defense production is no longer profitable and have threatened to cease production. Given the many demands on a reduced defense budget, the Department can afford to support only those industrial capabilities that are both essential to defense and genuinely at risk. This requires more frequent and more careful assessment skills by DoD. Therefore, DoD is developing organizations and policies that will ensure consistent analysis of industrial capabilities.

New Organizations

The Department of Defense has reorganized in order to focus attention on industrial capabilities and related issues. In some cases, existing operations have been changed; in others, new ones have been established.

As part of the Office of the Secretary of Defense, the Department established an Assistant Secretary of Defense for Economic Security (ASD(ES)). The ASD(ES) is responsible for setting DoD policy in the areas of industrial affairs, dual-use technology, and international cooperation programs. The office also has oversight responsibility for installations, base realignment and closure (BRAC), and community economic adjustment. The ASD(ES) works with and provides guidance to the Military Services in these areas, and serves as a liaison to private industry, the White House National Economic Council, the Departments of Treasury and Commerce, and other economic agencies within the Executive Branch.

In addition, the Department established the new office of the Deputy Under Secretary of Defense for Acquisition Reform (DUSD(AR)). The DUSD(AR) is responsible for streamlining and improving DoD's acquisition system. The DUSD(AR) is supported by the DoD Acquisition Reform Senior Steering Group, whose members are responsible for the full spectrum of acquisition matters confronting the Department.

In April 1994, the Deputy Secretary of Defense established the Defense Industrial Base Oversight Council. The Council integrates responsibilities, processes, and functions that previously were fragmented throughout the Department. Acting as a management board of directors, the Council provides guidance for, and high level oversight of, an extensive Industrial Base Review (discussed below). The ASD(ES) acts as the Council's executive secretary.

The Industrial Base Review

In directing the creation of an Industrial Base Review, the Department recognized the need for an overall review of DoD programs and policies concerning industry. The Review is focusing senior management attention on the Department's current programs and practices, on different methods, guidelines and models for conducting analyses, and on the development and implementation of new policy and program initiatives.

The Department's goal is to integrate the organizations and processes that address industrial capabilities into its existing budget, acquisition, and logistics processes. To date, the Department has been engaging in

such analysis on an ad hoc basis. The new organizations and the Industrial Base Review are designed to ensure that systematic analysis of industrial capabilities is a key part of the DoD's everyday decisionmaking.

INTERNATIONAL COOPERATION -- NEW WAYS OF DOING BUSINESS WITH GOVERNMENTS

In military operations, U.S. forces often fight or work alongside the military forces of other nations. Deploying forces in cooperation with those of other countries place a high premium on interoperability -- ensuring that U.S. systems are compatible with allied systems.

This new emphasis on interoperability, to include operations other than war, is especially important because it comes during a period of declining defense budgets not only in the United States, but also in allied nations. Thus, the United States and its allies are challenged to do more with fewer resources, and interoperability provides needed leverage.

International cooperative efforts offer a real chance to enhance interoperability, stretch declining defense budgets, and preserve local defense industrial capabilities. Thus, the Department has renewed its efforts at international cooperative development. Such cooperation can range from simple subcontracting relationships to licensing and royalty arrangements, joint ventures, and bilateral and multilateral cooperative programs. Some of the more notable success stories in international industrial cooperation include the F-16 Falcon, AV-8 Harrier, T-45 training aircraft, CFM-56 engine, and the continuing cooperative efforts under the NATO Airborne Warning and Control System (AWACS) program and in theater missile defense. The Department is now working with allies in Europe and Asia to explore new possibilities.

As DoD takes greater advantage of the opportunities in international cooperation and commerce, it is continuing to focus on the risks of weapons proliferation. DoD has worked to ensure that agencies understand the likely nature and extent of impacts on industry that different arms transfer policies might have, and that these are taken into account in the new conventional arms transfer policy. Through this process, the resulting U.S. arms transfer policy can place appropriate weight on industrial capabilities, while maintaining an overall focus on the long-standing national security and foreign policy objectives that are at the heart of arms transfer policy.

NEW WAYS OF DOING BUSINESS WITHIN DOD

The Department is undertaking several initiatives to restructure the way it conducts business to give greater recognition to economic and commercial imperatives. Depot maintenance and base closures are two areas that highlight changes underway.

Depot Maintenance

The Department has put in place a core depot maintenance policy to help quantify its infrastructure requirement for depot maintenance. DoD requires sufficient capacity within its depots to support the core readiness, sustainability, and life-cycle requirements of weapons and equipment, which are based on the contingency scenarios established by the Joint Chiefs of Staff (JCS). The core depot maintenance policy identifies and quantifies specific capabilities that need to be resident in the Department's depots to meet the JCS requirements. Depot maintenance is discussed in more detail in the Infrastructure and Logistics chapter.

Base Closing -- Restructuring Continues

Closing military bases that are no longer needed continues to be a high priority for the Department. The chapter on Infrastructure and Logistics describes the 1995 BRAC process and the Department's efforts to structure and manage its installations.

DoD is closing and realigning bases in the United States as a result of decisions made through base closure processes in 1988, 1991, and 1993. These three rounds identified 70 major bases for closure. The Department estimates that these closures will save about $4.3 billion a year once they have been fully implemented.

Reinventing the Base Reuse Process

Over a year ago, President Clinton presented his new Plan for Revitalizing Base Closure Communities. Its five elements are:

- Jobs-centered property disposal that recognizes the importance of local economic development.
- Fast-track environmental cleanup that removes needless delays while protecting human health and safety.
- Transition coordinators, to act as ombudsmen and resource persons at closing bases.
- Access to transition and redevelopment help for workers and communities.
- Larger and faster economic development planning grants.

JOBS-CENTERED PROPERTY DISPOSAL FOR ECONOMIC DEVELOPMENT AND JOB CREATION

Today the Administration can report real progress in implementing the vision of job-centered property disposal. Because existing federal law required DoD to charge full price when transferring property to local redevelopment authorities, the Administration sought and received authority to transfer property at less than fair market value to facilitate local economic development. On April 6, 1994, DoD published an Interim Final Rule implementing this authority and, after a four-month public comment period, revised the rule to address concerns expressed by affected communities. These new regulations, which outline the criteria and application process for economic development conveyances, mark a significant departure from the old way of doing business and will help speed economic recovery and job creation. Efforts are ongoing to refine the process further, and DoD expects to publish a comprehensive guidebook regarding these procedures early this year.

FAST-TRACK CLEANUP

As part of the Fast-Track Cleanup initiative, BRAC Cleanup Teams have been formed at bases where significant land transfers to the local communities are planned. These teams, composed of representatives from DoD and regulatory agencies, have completed comprehensive reviews of the environmental condition of their bases and are working on cleanup remedies.

TRANSITION COORDINATORS

To help implement the President's plan, the Department established the Base Transition Office (BTO). The BTO supports the work of the transition coordinators at closing major bases. DoD currently has 67 base transition coordinators (BTCs) in the field tasked to identify and integrate community reuse needs. The BTCs work directly with communities, base commanders, OSD, and other agencies to speed reuse and redevelopment assistance. Of the 339 issues raised by communities in these reports over the past year, 87 percent have been resolved, with DoD working hard to address the remaining issues.

REDEVELOPMENT HELP

In addition, assistance teams representing several federal agencies visited closing bases over the last year to outline the types of job-search help available to employees. These efforts are coordinated by the Under Secretary of Defense for Personnel and Readiness. Also, a joint DoD-Department of Commerce clearinghouse has been established to provide information needed to anticipate, plan for, and respond to defense downsizing.

FOSTERING COMMUNITY ECONOMIC ADJUSTMENT

The task of remaking the economic foundation of communities affected by base closures is not easy. Because local communities are the best judges of their strengths and opportunities, DoD's approach to community adjustment is to provide resources and advice on charting a course for revitalization, rather than to impose solutions from Washington. The President's initiative will give local communities the funds and technical assistance necessary to plan for the future and to reuse base land and facilities.

DoD's Office of Economic Adjustment (OEA) operates a community-based technical assistance and grant program that supports development and redevelopment plans for closing installations. Currently, OEA is working with 82 communities affected by base closures, realignments, or personnel reductions. During FY 1994, OEA provided 60 grants to base closure communities totaling about $24 million.

The Department's activities, together with those of other agencies, are already demonstrating results. By the end of the 1994 fiscal year, base reuse activities had replaced over one-third of the civilian positions that were lost at closed military bases as a result of 1988 and 1991 BRAC decisions, and DoD expects the number of new jobs to increase.

In addition to assisting communities affected by base closures, OEA also provides transition planning assistance to communities facing defense contractor cutbacks and to states and regions in developing proactive defense conversion plans. The office has provided 31 grants, totaling about $5 million, in FY 1993 and FY 1994 for these purposes.

REINVENTING HOMELESS ASSISTANCE PROCESS

The Department was also successful in working with other federal agencies and Congress to pass the Base Closure Community Redevelopment and Homeless Assistance Act of 1994, which improves the process for addressing local reuse needs, including the balancing of homeless assistance with economic development. Under the new process, local communities work along with homeless assistance providers to decide how best to address homeless needs. The old process permitted homeless providers to acquire property as an entitlement, directly from the federal government without regard to local community reuse plans. The Act permits the balancing of homeless needs with communities' desires to create jobs and promote economic development.

CONCLUSION

Defense budgets are no longer large enough to accommodate all defense acquisition needs through a defense-unique industrial base. For the United States military to continue to have the most advanced weaponry, the Department has to adjust its policies. It must change the way it does business with business, through acquisition reform, dual-use technology policies, and recognition of essential capabilities. It must change the way it does business with allies through increased international cooperation and interoperability. Finally, it must change the way it does business itself through restructuring and community reinvestment. The Department is confident that these policy changes will strengthen both national and economic security, and ensure that the military continues to be prepared to meet threats of the post-Cold War era.

ACQUISITION REFORM

INTRODUCTION

Although DoD has long sought to improve its acquisition processes, the changing world environment including a dramatically different and unpredictable threat, rapid advances in technology, and a declining defense budget have combined to make the existing system insufficient for meeting the new challenges of today. DoD must fundamentally reengineer the way it does business if it is to help improve long-term military readiness.

The Department has aggressively pursued an intense and focused effort at reforming its acquisition process. To accomplish this, the Secretary of Defense created a full-time, senior executive presidential appointee position -- the Deputy Under Secretary of Defense (Acquisition Reform) (DUSD(AR)) -- as the focal point for development of a coherent and practical step-by-step plan for reengineering the acquisition process.

Immediately following appointment, the DUSD(AR) began working with the Deputy Secretary of Defense and the Under Secretary of Defense (Acquisition & Technology) to develop a vision for acquisition reform. In February 1994, the Secretary of Defense issued a paper entitled *Acquisition Reform: A Mandate for Change*. This paper provided the conceptual foundation of DoD's approach to acquisition reform. By following a plan based upon the mandate, DoD will institutionalize business processes that facilitate affordable and timely delivery of best-value products and services that meet warfighter needs. DoD will also create and maintain an environment for continuous process improvement while supporting the nation's social policies, protecting the public trust, and fostering development of an integrated national industrial and technology base.

THE DOD PROCESS FOR ACQUISITION REFORM

To assist in the implementation of the vision, the DUSD(AR) organized the DoD Acquisition Reform Senior Steering Group (ARSSG) to serve both as an advisory body in implementing acquisition reform initiatives and to build a consensus within DoD on acquisition reform initiatives. This group is composed of senior acquisition executives from the Services, the Director of the Defense Logistics Agency, the Director of the Defense Contract Audit Agency, the Vice Chairman of the Joint Chiefs of Staff, the DoD Inspector General, and senior executives within the Office of the Secretary of Defense (OSD) involved in making acquisition policy and conducting or reviewing acquisitions.

Process Action Teams (PATs), composed of full-time, multidisciplinary, interdepartmental personnel, have been and will continue to be created to develop plans to reengineer various business processes. The personnel selected for the PATs have a mixture of practical, field-level experience and policy backgrounds.

Due to the size and complexity of the acquisition system, the decision was made to attack the reengineering effort on a process-by- process basis. In addition, the work was prioritized in three rounds or phases, noted below, that reflect the immediate, near-term, and long-term goals, respectively.

- Round One. This involves targeting steps in the process with a high payoff or a one-time opportunity to effect change. Three issues requiring immediate action fell into this category. The first was legislation for streamlining the acquisition process. To accomplish this, the recommendations of the DoD Advisory Panel on Streamlining and Codifying Acquisition Laws

(known as the Section 800 Panel) and the Secretary's Bottom-Up Review were converted into a DoD legislative proposal. That proposal was presented to the Office of Management and Budget (OMB) for interagency review and served as the foundation for the Federal Acquisition Streamlining Act of 1994 (FASTA). The two remaining issues -- improving the use of Electronic Commerce/Electronic Data Interchange (EC/EDI) in contracting, and reducing DoD's reliance on military specifications and standards -- were pursued through the use of quick reaction PATs.

- Round Two. This concerns issues of high priority but not as critical in terms of timing as Round One actions. The DUSD(AR) is just beginning to work these issues. Additionally, FASTA legislation and recommendations made by two Round One PATs are being implemented in Round Two.
- Round Three. This entails additional priority issues and processes that require change and will institutionalize continuous process improvement, but must be delayed due to prioritization of available resources.

Priorities will be readjusted continually as reform goals and progress towards achieving them are reviewed.

DOD ACQUISITION REFORM GOALS

A strategic plan has been completed, including identification of specific problems with the existing process, objectives, or benchmarks that should be considered in creating new acquisition processes, and specific goals and objectives of particular processes within the acquisition system. This plan will guide ongoing efforts to ensure institutionalization of reform measures and create an environment for continuous process improvement that will last beyond the tenure of this Administration. The specific goals on this strategic plan are outlined below.

Enhance the Needs (Requirements) Determination Process

One immediate goal (Round One) in this area is to eliminate DoD-unique product or process specifications or standards that inhibit the purchase of commercial products or services, or dictate to a contractor how to design or produce a product or service. The Department has made significant strides in accomplishing this goal.

As a result of a Process Action Team report on Military Specifications and Standards entitled *Blueprint for Change*, the Secretary of Defense signed a memorandum in June 1994 directing that the Department rely on the use of performance specifications and, if performance specifications are not practicable, on the use of nongovernment standards. Government-unique specifications or standards may be used only with a waiver when use of performance specifications or nongovernment standards are impractical, do not meet user needs, or are not cost effective. While not eliminating the use of military-unique specifications, this essentially reverses the existing preference system. The Standards Improvement Council, composed of representatives of the Services and defense agencies, is working on a complete plan of action detailing each tasking that must be accomplished to implement this policy change and is responding to concerns regarding such issues as logistics supportability when using a performance standard.

A lower priority goal (Round Two) for this process is integration of needs (requirements) determination; resource allocation within the planning, programming, and budgeting system (PPBS); and the acquisition processes. Working groups will be established in the near future, utilizing an Integrated Process Team (IPT) approach, to identify and recommend cost, schedule, and performance trade-offs. The working groups will also look at enhancing program stability.

Improve the Systems Acquisition Process

The main goal (Round One) for improving this process is to use commercial practices to acquire military-unique as well as commercial items. In support of this goal, nominations for seven pilot programs were submitted to Congress for review and approval under the FY 1991 National Defense Authorization Act. Congress approved five pilot programs in FASTA. These programs, which will test the use of commercial practices in the acquisition of major weapons systems, are:

- Fire Support Combined Arms Tactical Trainer (FSCATT).
- Joint Direct Attack Munition (JDAM).
- Joint Primary Aircraft Training System (JPATS).
- Commercial Derivative Engines (CDE).
- Commercial Derivative Aircraft (CDA).

Extensive relief from myriad Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) requirements waivable at the OSD level had already been provided for these programs prior to the passage of FASTA. Metrics are being developed to measure the impact of the relief granted, from both statutes and regulations, and on the ability of the government to buy commercial and government-unique items under commercial terms and conditions.

The Round Two goal is to improve Service and OSD milestone decisionmaking and information collection processes for major systems, commensurate with risk, dollar value, and acquisition strategy. An Oversight and Review PAT was chartered in September 1994 with the following objectives:

- Identify the critical decisions that must be made at each milestone.
- Identify information necessary to support oversight authorities.
- Identify the most effective and efficient means to make information available.
- Develop a set of alternatives to implement goals of the team.
- Identify barriers to implementation of each proposed alternative.
- Evaluate the impact the alternatives will have on the ability to make milestone decisions.
- Identify any required changes to law, regulations, or policy to implement the preferred approach.
- Develop metrics to measure progress towards new system.
- Create a plan for implementing the preferred approach.
- Identify a system for follow-up to ensure compliance with the new approach.

The PAT report was completed in December 1994. The recommendations from the report are now being reviewed by the ARSSG for implementation.

Improve the Procurement Process

The immediate goal for honing this process is to make maximum use of technology to facilitate and enable reengineering of the acquisition process. A PAT was chartered in August 1993 to develop a plan for implementing the use of EC/EDI in contracting within DoD as soon as practical, particularly for making small purchases. The PAT's report -- *DoD Electronic Commerce (EC)/Electronic Data Interchange (EDI) in Contracting* -- was approved by the Deputy Secretary of Defense in December 1993. The implementation calls for a two year phase-in. DoD is fully coordinating and assisting other government agencies as part of the implementation of the National Performance Review initiative. The DUSD(AR) was also recently appointed as the executive agent for implementation of EC/EDI across all functional areas within DoD, in addition to contracting.

Perhaps the most important goal for achieving long-term benefits in this process is to ensure that DoD emulates the best procurement practices of world-class customers and suppliers. Significant work has been accomplished towards achieving this Round Two goal. A PAT to reengineer the procurement process began work in October 1994 with a charter to accomplish the following:

- Determine how to identify and disseminate best procurement practices throughout DoD.
- Improve sole source proposal preparation, evaluation, and negotiation processes.
- Streamline the source selection process.
- Address buying activities, roles, and missions.
- Encourage early involvement in the process.
- Eliminate nonvalue added activities.
- Optimize the procurement process at a system level.

The procurement process team's report will be completed in early 1995.

Improve Contract Administration

An immediate goal for this process is twofold: to shift DoD's emphasis from end-item inspection to a system of process controls, and ultimately an output oriented system; and to ensure that oversight and review of contract management add value to the process and are minimally intrusive. In February 1994, the Secretary signed a memorandum allowing the use of any acceptable quality assurance system, including internationally recognized standards. The intent was to make it possible for contractors to use one quality system throughout a facility.

In October 1994, as a Round Two effort, the Contract Administration PAT was chartered to review the goal for minimally intrusive, value-added contract administration. The objectives included in the charter for this PAT are outlined as follows:

- Identify customer needs for contract administration.
- Determine how to best ensure delivery of quality products (Quality Partners Initiative).
- Facilitate early involvement of contract administration resources.
- Simplify management of government property.
- Improve oversight of contractor overhead rates.
- Improve contract closeout and payment processes.
- Determine and review commercial contract administration infrastructure.
- Clearly define roles and missions.
- Maximize use of technology to reform contract administration.

The PAT's report, like the Procurement Process team report, is expected in early 1995.

Improve Contract Terms and Conditions (Legal, Pricing, and Financing Issues)

The first priority for improving this process is to eliminate, to the maximum extent practical, government-unique terms and conditions. After appointment of the DUSD(AR), one of the first focus areas where work began was preparation of a DoD legislative proposal which addressed the Section 800 Panel recommendations to eliminate, where practical, government-unique terms and conditions. Now, with passage of FASTA, DoD is in the process of implementing its provisions and wants to provide the relief granted by Congress as soon as practical. A government-wide implementation plan for FASTA chartered 11 teams to address various portions of the legislation. The FAR Council expects to publish changes to

the FAR for public comment in the near future. The plan also calls for full implementation of FASTA by April 1995, a full six months ahead of the statutory requirement.

A near-term priority for this process is foreign contracting and contingency operations -- update laws regarding contingencies, the lending and borrowing of defense equipment, and war risk to contractor personnel. Preparation of legislative changes in the FY 1996 National Defense Authorization Act is in process to provide authority for lending and borrowing to and from U.S. allies and to provide the Department authority to grant waivers during contingencies declared by the Secretary.

Change the Culture

The top priority in this area is to increase the quality and effectiveness of the acquisition workforce. The Defense Acquisition University is providing seminars to students and faculty on acquisition reform. New courses are being established and the curriculum is continuously revised. Acquisition workforce qualification standards have also been increased.

An intermediate goal is to improve federal and DoD acquisition regulations and DoD system acquisition policies to better facilitate the acquisition process. As mentioned above, implementation of statutory changes into the regulations is in process. DUSD(AR) will support the FAR rewrite mandated by the National Performance Review that will create a guiding principles section as an introduction to the FAR and will also include all government-wide and agency-unique mandatory provisions. The chartered Procurement Process PAT, noted earlier, is looking at ways in which best practices can be incorporated into acquisition desk books.

Define Measures of Success -- Metrics

A Round Two goal of this process is to establish clear measurements of system responsiveness and metrics to determine success of change efforts. The Defense Acquisition Pilot Program Consulting Group (PPCG) on Metrics was established in March 1994. The group's interim fall 1994 report was drafted and is under review. This report describes the activities, methodologies, and accomplishments of the PPCG and offers an interim assessment of the work to date to assist in the development and validation of evaluation criteria and metrics for each of the defense acquisition pilot programs. Initial metric agreements were reached with three pilot programs and the remainder are under development with the objective to conclude, where possible, by February 1995.

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.

The past year has made a critical difference. The accomplishments of the Process Action Teams and the passage of FASTA are milestones in the pursuit of acquisition reform, validating the strategy of reengineering the acquisition system.

Much work remains to be done -- in fact, arguably the hardest part is ahead. DoD leadership is focused on reform and its criticality to national security. To be successful, support and input from the entire acquisition community, both within and outside of the government, are needed.

ENHANCING THE MILITARY TECHNOLOGICAL ADVANTAGE

INTRODUCTION

Military operations in the changing global environment require that U.S. forces be prepared to confront a wide range of potential opponents. Increasingly, these potential opponents have access to a vast array of high technology weapons which are available on the global market. These include advanced aircraft, weapons, missiles, naval forces, ground weapons, and weapons of mass destruction. Maintaining the technological advantage in military equipment so vital to the success of Operations Desert Shield and Desert Storm is critical. As the United States shapes its forces to meet the challenges of a changing world within the constraints of available resources, the potential of present and emerging technologies must be maximized to provide the best possible equipment, doctrine, and training for American soldiers, sailors, and airmen.

REVOLUTION IN MILITARY AFFAIRS

The challenges go well beyond confronting an increasing range of potential opponents who have access to high technology weapons. The Department is examining whether recently fielded and emerging technologies, in combination with organizational and operational changes, will produce dramatic improvements in military effectiveness, the so-called Revolution in Military Affairs (RMA).

Historically, an RMA occurs when the incorporation of new technologies into military systems combines with innovative operational concepts and organizational adaptations to fundamentally alter the character and conduct of military operations. Information technologies are already dramatically improving the ability to gather, process, and disseminate information in near-real time. These information technologies, combined with improvements in conventional precision strike capabilities, affect the conduct of offensive and defensive military operations. Additionally, information technologies are expanding the scope of advanced simulations to include enhanced training, system design and testing, and developments in doctrine and tactics. Major challenges of both understanding and exploiting this emerging RMA are selecting appropriate technologies and developing the means to rapidly evaluate and incorporate operational and organizational innovations.

RESPONDING TO PROLIFERATION OF MILITARY TECHNOLOGY

Particularly important is the requirement that there be a process approach in place to allow the Office of the Secretary of Defense (OSD), in conjunction with the Joint Staff, the unified Commanders in Chief, and the Services, to solve important military problems as they develop and, if necessary, to field required new military capabilities to the operating forces expeditiously and at reduced cost. This flexibility is especially critical in the present global environment when U.S. forces must be prepared to execute a variety of different missions -- facing potential opponents who may be equipped with the latest weapon technologies obtained from the global arms market.

ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS

The Advanced Concept Technology Demonstration (ACTD) is a major initiative of this Administration which, as a component of the acquisition reform process, specifically addresses the need for rapid technology insertion into the forces. It is a concept designed to accelerate the transition of maturing technologies with a potential to rapidly provide improved military capabilities or technological solutions to specific emerging operational challenges. The ACTD approach seeks to transition technology from the laboratory into the operational environment as expeditiously as possible. In doing so, it draws

technologists and military operational commanders into closer working relationships. Traditionally, technologists have taken their new systems into the field to test utility and assess their potential to support military operations. During these tests, the operational commander was frequently assigned a supporting role and was in a position to only observe rather than actively participate in the demonstration. Based on recommendations from several studies including the Packard Commission and Defense Science Board, the ACTD process, by comparison, will require the operator to play a much more proactive and responsible role. This partnership will result in more rapid, responsive, and effective transition of advanced technology to the operational forces, providing innovative solutions to emerging critical military needs.

TECHNOLOGY REQUIREMENTS DEFINED BY THE MILITARY

Specifically, the ACTD is driven by the military user and the user's perceived critical warfighting needs. Its objectives are to allow the user to gain a more thorough understanding of a new technology and its potential to support military operations. In doing so, it is anticipated the user will be able to develop and refine the doctrine, tactics, and concept of operations which will exploit the new technologies. It will also allow the user, based on experience in the field, to comment on and make suggestions for improvements or modifications to the equipment under evaluation. With the ACTD approach, these changes can be made during the relatively informal demonstration phase of a system's life cycle. In other cases, user input will provide the basis for a realistic set of requirements with which to enter the more structured and formal acquisition process. This means entering the acquisition process with the full input and coordination of the operational commander. Allowing the operator early and full access to the new technologies will permit a more informed acquisition decision as to functions and quantity of proposed systems. The ACTD seeks to provide the commander with a militarily significant residual capability at the end of the demonstration.

FOCUSING SERVICE AND DEFENSE AGENCY TECHNOLOGY

The ACTD is not a series of new programs but rather seeks to focus the existing, substantial investment the Services and agencies have made in technology programs. For instance, the first eight approved ACTDs build upon $2.2 billion (FY 1995-2001) of Service and agency technology efforts already programmed by augmenting this investment with $155 million in OSD funding to move these technologies from the laboratory to the operational environment. OSD augmenting funds are for integration of multiple technology programs, perhaps from several Services and agencies, into a single ACTD. This funding additionally will provide for multiple copies of systems under demonstration in numbers which generate military utility during valid exercises or operations. Lastly, OSD augmenting funds are employed to provide logistics support for the ACTD for two years of operations in the field.

SELECTION CRITERIA

To provide focus on what technologies to employ, the ACTD process has developed selection criteria which seek to assist both the technologist and the military operational commander in developing a specific ACTD.

- First, the technologies under consideration and the approach must offer a potential solution to an important military problem or introduce a significant new capability. To assist in identifying valid problems and relevant new capabilities, the Joint Requirements Oversight Council, chaired by the Vice Chairman of the Joint Chiefs of Staff, and the unified commanders participate in the selection process.

- Second, the technologies must be relatively mature and contribute to solving the problem under consideration.
- Third, each ACTD must develop an executable program plan and management plan.
- Finally, seeking to employ relatively mature technologies, the ACTD is a short-term program. It must be achievable within a two to four year time period and leave an operational legacy supported for at least two additional years.

ACTD PROGRAM EXECUTION

Because of the diversity of technologies and military problems addressed in individual ACTDs, each comes with its own management plan. ACTD management plans serve as a memorandum of understanding between all participating parties in each demonstration. Most importantly, they are an agreement between the technology development manager and the operational commander. Additionally, the management plan lays out a demonstration schedule and defines the measures of success desired in each ACTD. An oversight group for each ACTD is established to assist in problem resolution. An advanced technology group composed of one and two star general and flag officers from the Services and Joint Staff provides advice on the general process and ACTD selection. Inputs from the unified commanders and Joint Staff are coordinated with the recommendations of the advanced technology group. Complete oversight is maintained by a steering group -- composed of senior OSD and Service representatives and chaired by the Under Secretary of Defense for Acquisition and Technology.

OUTCOME OF AN ACTD

Upon the conclusion of an ACTD, based on the results of the exercises, operators will select one of three possible decisions regarding further acquisition and employment of the technologies.

- First, they may choose to terminate the efforts or restructure them based on the evolved concept of operations and lessons learned during the ACTD.
- Second, if the operator recommends further acquisition, it may be possible, based upon lessons learned during the ACTD, to enter the formal acquisition process at some advanced milestone point.
- Finally, it may be possible to transition the technology demonstrated directly to the warfighter. In this case only minor or perhaps no modifications to the existing equipment will be required. This transition approach is particularly appropriate where only small quantities, such as information systems, of the new equipment are required.

ACQUISITION REFORM

The ACTD is an important element of the Department's comprehensive acquisition reform effort. Specifically, the ACTD seeks to rapidly transition new technological capabilities into the operational environment. It is not, however, considered or intended to be a substitute for the formal acquisition system required to introduce large, complex weapon systems such as ships, tanks, or aircraft. Nor is it intended to support acquisition of new systems such as vehicles or munitions, which may be procured in large numbers and over a number of years, and which do not involve substantial modification of operational concepts or procedures. The ACTD, however, can serve as a prerequisite in the acquisition process for new technological capabilities by providing both the developers and users with better up-front definition and understanding of new systems. In some instances, the ACTD approach may be able to replace or accelerate the early formal steps of the acquisition process. In other cases, the ACTD may in itself become an acquisition path for items required in only small numbers. Surveillance systems; command, control and communications systems; and special operations equipment are examples of

technologies which are often required in only limited amounts and may be obtained through the ACTD approach.

APPROVED ACTDs

As mentioned earlier, eight ACTDs have presently been approved with funding provided by Congress. These include:

- Rapid Force Projection Initiative-Enhanced Fiber Optic Guided Missile.
- High Altitude Endurance Unmanned Air Vehicle.
- Precision Signals Targeting.
- Synthetic Theater of War-97.
- Precision Strike to Counter Multiple Launch Rockets
- Medium-Altitude Endurance Unmanned Aerial Vehicle.
- Cruise Missile Defense.
- Joint Countermine.

In many cases, individual ACTDs involve the coordination and cooperation of several Services and development agencies. As an example, the Joint Countermine ACTD will evaluate the potential of new technologies from the Navy, Marine Corps, and Army. In a series of demonstrations, the ACTD will test the capabilities of new mine countermeasure technologies operating together to solve the complex mine detection, avoidance, and neutralization problems associated with shallow water, amphibious, and land operations. Previous demonstrations would have focused on evaluating the potential of only a single new technology to counter mines. The ACTD will determine the value added gained in supporting mine countermeasure missions by building a system which exploits and enhances the synergy of new technologies working together in a coordinated architecture. The ACTD will leave those technologies which proved successful during the ACTD to the operational commander as a residual capability.

CONCLUSION

In a period where the global proliferation of advanced technologies is unprecedented and the generational life of any technological system may be measured in months rather than years or perhaps decades, the ACTD approach provides a means of rapidly moving new capabilities into operational forces. In order to do this effectively, it is critical to closely integrate the warfighter into all aspects of the technology transition process. The ultimate goal of the ACTD is to facilitate the rapid transition of emerging technologies from the laboratory into the field at substantially reduced cost compared to the past and in a manner which provides U.S. forces with timely capabilities to operate safely and effectively in a dynamic global environment.

PERSONNEL

INTRODUCTION

The Department of Defense is committed to maintaining readiness and ensuring that America continues to field the best trained, best equipped fighting force in the world. In order to accomplish these goals, the Department relies on the courage, training, professionalism, and morale of each individual man and woman in uniform. No weapon system is better than the people who operate and maintain it. As a result, one of the Department's most important tasks has been to maintain the high quality of its servicemembers.

FORCE STRUCTURE AND MANPOWER LEVELS

Readiness is the Department's top priority. In fact, DoD is restructuring U.S. armed forces in order to maintain readiness. Cutting force structure is central to the Department's plan to maintain both readiness and balance in defense posture. In planning for the future, the Department faced various tradeoffs between appropriate force size and adequate resource levels to ensure forces will remain ready.

By the late 1980s, signals were clear that DoD was going to downsize. By conducting the Bottom-Up Review and taking a tough, comprehensive look at force structure, the Department determined that by 1999 the active duty force requirement would be 1.4 million -- a significant drop from nearly 2.2 million on active duty in the late 1980s. Today, with an active force of between 1.6 and 1.7 million, the drawdown is about 75 percent complete.

Despite the difficulty of this transition, two important objectives have been achieved. First, readiness has been maintained; and second, people are treated fairly. Indeed, one of the keys to maintaining readiness is putting people first. Massive reductions-in-forces (RIFs) have been avoided, and transition programs for departing members continue to be offered.

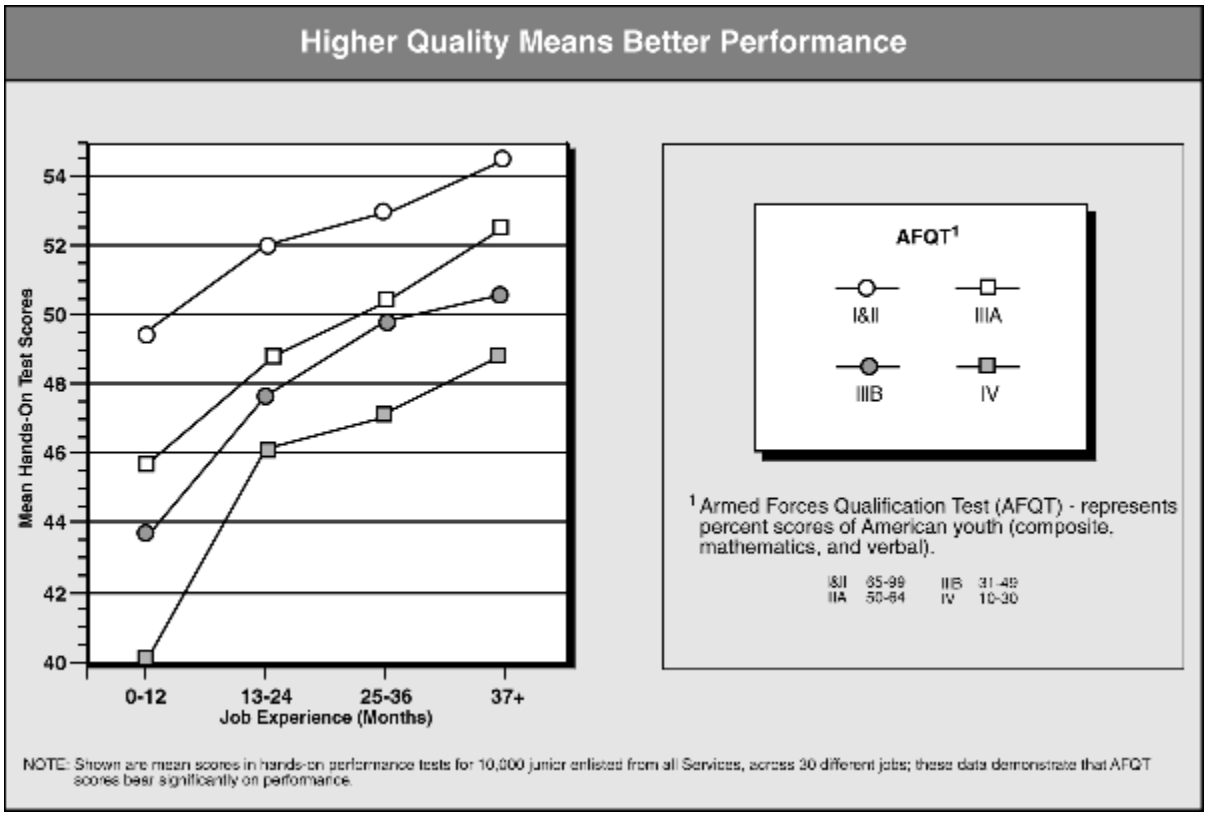
The Department plans to continue the force and personnel drawdown as initiated in previous years. The Army will reduce from 24 divisions during FY 1992 to 20 divisions by FY 1995 (12 active and 8 Reserve component). The Navy's Battle Force ships will decrease in number from 467 in FY 1992 to 373 in FY 1995. Included in the totals is a reduction of one aircraft carrier, bringing the total to 11 active and one Reserve aircraft carriers. The Marine Corps will maintain its three active and one Reserve divisions. By the end of FY 1995, the Air Force will have reduced to about 21 fighter wing equivalents (13 active and 8 Reserve component) from 29 fighter wing equivalents in FY 1992. Other U.S. attack/fighter air forces will include 10 active and one Reserve Navy carrier wings and three active and one Reserve Marine Corps wings. Strategic bombers will be decreased from 209 in FY 1992 to 141 by the end of FY 1995. The Air Force will also reduce the number of intercontinental ballistic missiles from 930 in FY 1992 to 585 by the end of FY 1995.

The President's budget request for active military, Selected Reserve, and civilian manpower for FY 1995 also continues to make significant progress toward the stated goals for the size of the military. At the onset of FY 1994, active duty military strength was at 1,705,103; by the end of FY 1995, active strength will decrease to 1,523,251. Selected Reserve will be reduced to 964,997 and civilian employees to 866,927. Many of the civilian reductions were initiated due to the Department's involvement in reductions and streamlining as directed in the National Performance Review in which DoD has taken a majority of the mandated Full-Time Equivalents (FTE) reductions. The civilian end strength represents a reduction of 4 percent from FY 1994 levels and is a direct result of accelerated civilian reductions during this past year. The accelerated reductions moved FY 1999 goals forward to FY 1997. These figures could be altered by a report requested by the armed services committees in the FY 1995 Authorization Conference Report. This report should identify a number of active duty positions in the Services, defense agencies, and field activities for conversion to civilian positions, freeing military members for combat positions.

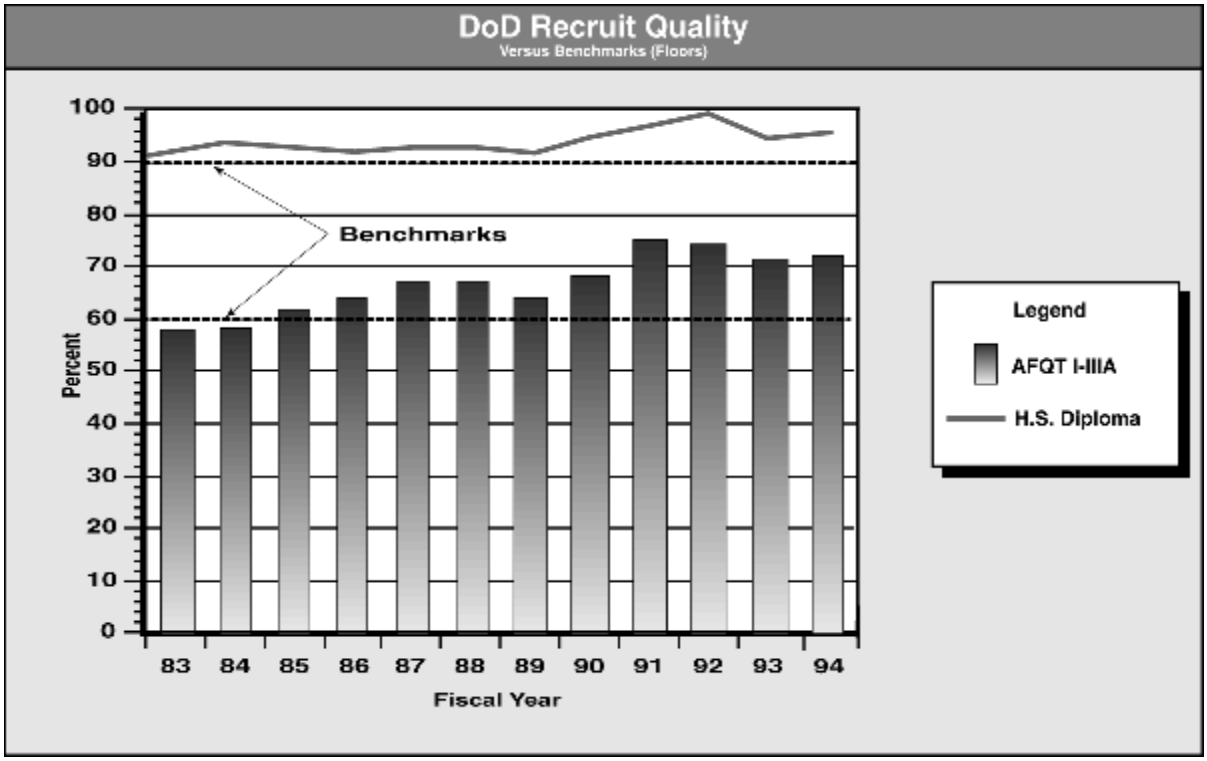
DoD recruits high quality people, provides them the rigorous and realistic training that enable the Services to maintain readiness, and finally, rewards their service by treating them fairly. These three objectives are not subject to change. Even in this time of profound change in America's national security concerns, the Secretary of Defense recognizes that these commitments are the foundation of a successful, ready-to-fight force.

RECRUIT HIGH QUALITY PEOPLE

One part of maintaining readiness is ensuring a steady flow of new recruits. Each Service must recruit enough enlistees per year to sustain a flow of seasoned leaders for the future. Each year DoD must recruit about 200,000 young people to join the full-time, active duty armed forces and approximately 150,000 for the Selected Reserve. The Department estimates that over the next three years non-prior Service accession missions for the active force will increase 19 percent from the current levels.



In recent years, DoD has done well in attracting high quality recruits. For example, over the last two years, more than 95 percent of all active duty recruits held a high school diploma, while only about 75 percent of American youth, ages 18 to 23, have that credential. In addition, about 70 percent of new recruits have top-half aptitude scores, compared to 50 percent of the total youth population. Higher levels of recruiting quality serve to reduce attrition while increasing hands-on job performance -- and that means dedication and productivity, which are essential to unit performance and readiness.



Challenges in a Changing Recruiting Environment

All Services are facing a growing challenge -- American youth are becoming less interested in joining the military. Recent surveys show that 25 percent of 16 to 21 year-old men expressed propensity to join at least one active duty Service. This is a 2 percent decline from the 1992 level, and a 7 percent decline from the historic high of 32 percent in 1989 and 1990.

The Department believes that its greatest recruiting challenge is the lower propensity of American youth to enlist. Publicity about downsizing, coupled with reduced advertising budgets, seems to be giving the public the impression that the Services no longer are hiring, or that they are not a secure employer. The Services are still hiring as mentioned before; they need 200,000 new recruits each year.

Congress recently increased the Department's advertising budget to help ensure that American youth are acquainted with armed forces opportunities. American youth need to receive the message that the Services still want them. In spite of the downsizing, the U.S. military is still one of the nation's largest employers and also one of the best.

National Service and Recruiting

The Department's review of the impact of National Service on military recruiting pointed to two critical determinants of whether the programs can coexist successfully -- the size of the National Service program (which determines its impact on armed forces recruiting efforts), and the value of its benefits in comparison with enlistment benefits. On both counts, DoD believes that the programs are correctly sized and shaped, ensuring that success in one does not jeopardize the other.

The Department is confident that the current size of National Service programs will not jeopardize recruiting programs -- and recent year experience bears this out. Moreover, given the greater value of the

military education benefit (Montgomery G.I. Bill) and the great depth of training provided by the active military, there is no recent indication that National Service programs would inordinately drain the pool of potential military recruits; again, this is borne out by recent year experience -- FY 1994 was the third best in the history of the all-volunteer force.

Recruiting -- An Essential Priority in DoD

The Department will continue to focus on quality recruiting. The Deputy Secretary of Defense formed a standing panel which includes the Secretaries of the military departments and the Chairman of the Joint Chiefs of Staff that meets quarterly and reviews the status of recruiting. This panel deals quickly and effectively with any emerging problems.

In addition to creating this panel, DoD has focused on three major recruiting initiatives.

- First, putting more recruiters on the street. The Services plan to field hundreds more recruiters than would have been possible had Congress not rescinded a requirement for an annual 10 percent reduction in the number of recruiters.
- Second, the Department will spend more on recruiting advertising. Currently the Services spend about $125 million annually to advertise job opportunities. In FY 1995, Congress appropriated an additional $89 million for Service advertising.
- Third, the Department and the Services plan to invest more advertising funds in ads aimed at young women. Specifically, they will launch a comprehensive magazine advertising effort targeting high quality women in the spring of 1995. This focus on women is clearly appropriate now that the Services are opening up more military assignments to women.

Also critical to the success in recruiting efforts are the recruiters themselves. To better understand the recruiters' environment, a DoD Recruiter Survey is being used. Results are expected to be released early in 1995. This report will give a better idea of how recruiters are coping with the most difficult recruiting period since the very inception of the all-volunteer force. Additionally, to better support the recruiters, DoD is planning to field the Joint Recruiting Information Support System (JRISS).

Table V-1

Quality and Numbers of Enlisted Accessions -- Active (Numbers in Thousands)

	FY 1994 Quality Indices		Accessions[1]			
Component Service	Percent High School Diploma Graduates	Percent Above Average Aptitude AFQT I-IIIA	FY1994 Objectives	FY1994 Actual	FY1995 Planned[2]	FY1996 Planned[2]
Army	95	71	68.0	68.0	70.0	83.9
Navy	95	68	54.0	54.0	53.2	57.5
Marine Corps	95	71	32.1	32.1	36.5	35.6
Air Force	99	81	30.0	30.0	31.6	31.1
TOTAL	96	72	184.1	184.1	191.3	207.9

[1] Includes prior service accessions. Only Army recruits to a prior service mission.
[2] Based on DoD budget plans for FY 1996-1997.

Table V-2

Quality and Numbers of Enlisted Accessions -- Selected Reserve (Numbers in Thousands)

	FY 1994 Quality Indices Non-Prior Service		Total Accessions Non-Prior and Prior Service			
Coponent/Service	Percent HighSchool Diploma Graduates	Percent AboveAverage Aptitude AFQT I-IIIA	FY1994 Objective[1]	FY1994 Actual[2]	FY1995 Planned[3]	FY1996 Planned[3]
Army NationalGuard	85	55	69.7	61.1	65.9	59.4
Army Reserve	95	70	53.0	49.1	56.9	56.7
Naval Reserve	96	75	15.2	15.0	18.0	18.4
Marine CorpsReserve	98	79	10.2	10.3	9.5	10.6
Air NationalGuard	92	80	10.6	7.7	8.5	7.1
Air ForceReserve	98	80	11.0	8.8	10.0	8.0
TOTAL[4]	90	64	167.6	156.1	168.8	159.7

[1] FY 1995 President's budget.
[2] Reserve Component Common Personnel Data System.
[3] FY 1995 budget estimates and FY 1996-1997 DoD budget estimates.
[4] Overall percentage for DoD.

Recruiting for the Selected Reserve

The position of the Army Reserve and Army National Guard is that downsizing, reduced budgets, and inactivating local units all serve to give the public the impression the reserves are no longer hiring, or the reserves are not a viable employment opportunity. Increased advertising budgets and more recruiters are needed to achieve outyear missions especially after downsizing abates and accession missions increase.

Full-Time Support to the Reserve Components

There are four categories of full-time support personnel who assist in organizing, administering, recruiting, retaining, instructing, and training the Guard and Reserve: Active Guard/Reserve; military technicians; Active component members assigned to support Guard and Reserve units; and federal civil service members. Table V-3 shows current and planned full-time support strengths.

Table V-3

Full-Time Support Personnel[a] (End Strength)

	FY 1994 Estimate	FY 1995 Planned	FY 1996 Planned	FY 1997 Planned
Army National Guard	51,207	51,053	49,157	47,370
Army Reserve	21,891	21,289	20,629	20,498
Naval Reserve	25,445	25,893	25,472	25,121
Marine Corps Reserve	6,796	6,707	6,609	6,685
Air National Guard	36,332	35,962	35,305	35,001
Air Force Reserve	17,633	17,222	17,155	16,998
TOTAL	159,304	158,126	154,327	151,673

[a] Includes Active Guard and Reserve, military technicians, Active component, and civil service personnel.

Full-time support personnel provide the essential foundation for Guard and Reserve unit readiness. With more missions being placed on Guard and Reserve units and the inherent litigations on the training time

of part-time members, adequate full-time support is imperative to ensure effective use of available time and proper maintenance of sophisticated equipment.

REALISTIC TRAINING TO KEEP THEM READY

The Department will continue to invest in quality training and maintaining operating tempo (OPTEMPO) standards for air, ground, and sea operations. Additionally, DoD will continue to invest in institutional or schoolhouse training, which includes specialized skill training, acquisition of recruits, officer training, and professional development courses. DoD offers over 20,000 courses -- an investment of $15 billion -- which produce 1.15 million graduates annually.

In addition to the individual proficiencies derived from schoolhouse training, the Services also invest heavily in unit training and readiness. The linkage between readiness and large unit training is well founded. DoD has directed the Services to fund readiness as its top priority. One only needs to visit the National Training Center to see how crucial large unit training is, or stand on the pitching deck of an aircraft carrier to marvel at the finely honed skills required to launch and land carrier aircraft.

The Department is working to understand readiness fully and maintain standards consistent with the Bottom-Up Review. It has mapped out the roles and responsibilities of the Services, the Commanders in Chief, the Joint Staff, and the Secretary of Defense. Several senior level panels have addressed readiness issues: the Senior Readiness Oversight Council, the Readiness Working Group, and the Readiness Task Force. And, at the same time, the Department is working to keep the armed forces ready. Specifically, it is developing input/output models that will help in allocating funds to maintain readiness.

Currently readiness is adequate and will remain there in the future, assuming that budgets are approved and that the Bottom-Up Review enhancements are forthcoming. Those enhancements include Army prepositioned stocks; strategic airlift and sealift; improved command, control, communication, and intelligence; and improved Army Guard and Reserve readiness and flexibility. Still, DoD will continue to watch for signs of hollowness such as growing or unacceptably high equipment maintenance backlogs, diversion of operation and maintenance funds from training to unfunded contingency missions, declining personnel quality, and declining personnel fill.

TREATING PEOPLE FAIRLY

The national security of the United States relies on well trained, equipped, and ready combat forces. In order to execute their responsibilities, the men and women of the Services must function as a unified team, united by a special bond of trust, mutual respect, loyalty, and shared sacrifice. These interrelationships distinguish the military from other large organizations and form the context within which the Department's equal opportunity policies and programs are understood.

Discrimination and sexual harassment jeopardize organizational readiness by weakening interpersonal bonds, eroding unit cohesion, and threatening good order and discipline. DoD supports readiness by comprehensively addressing human relations issues and by expeditiously investigating and resolving discrimination complaints. DoD strives to ensure it is an organization where every individual is free to contribute to his or her fullest potential in an atmosphere of respect and dignity.

The Department has carefully monitored the effects of the downsizing on minorities and is pleased to report that minority representation did not experience change as a consequence of the defense build-down. Section 533 of Public Law 103-337 requires the Department to report on readiness factors by race and gender. This report is at Appendix G. The appendix also discusses the Department's review of the

Services' discrimination complaint procedures and suggested improvements to ensure the fair and prompt resolution of identified transgressions.

Good quality of life, including adequate compensation, is an important component of medium-term readiness. Toward that end, the President announced a $25 billion increase in defense spending over the next six years. These funds will substantially improve DoD's quality of life posture. Initially the funds will be targeted on three broad areas: compensation adjustments, housing and barracks improvements, and better community services.

Pay/Compensation Issues

Senior leadership has pointed to three vital components of support for personnel: adequate and fair compensation, a steady and dependable level of medical benefits, and a stable retirement system. In order to attract, motivate, and retain quality people, the Department must provide a standard of living for its members that can compete with the private sector into the 21st century. If it does not, the Services cannot continue to recruit and retain high quality people in the all-volunteer force.

Over the past decade, military pay raises have not kept pace with the private sector, as measured by the Employment Cost Index -- this continues as a matter of concern. To help safeguard the effectiveness of recruiting and retention programs, the Department announced a package of benefits designed to improve quality of life and to sustain recruiting and retention. Three important components of that package relate to compensation. First, the Department will implement a cost of living allowance in areas of the continental United States where local costs exceed 109 percent of national average living costs. Second, the Department is moving to reduce the excessive absorption of housing costs now being experienced by those in uniform. Third, DoD intends to budget for the full pay raises allowed by law for the armed forces, consistent with the readiness initiatives announced by the President on December 1, 1994.

The Department has dealt aggressively with an unpopular rule in the pay system -- the practice of stopping the subsistence allowance (BAS) for those on field duty. As a result, the Department is applying three sequential fixes:

- The Joint Travel Regulation now has been modified to show temporary duty (TDY) as the preferred deployment option for missions such as peacekeeping. Haiti became the first major deployment where troops benefited from the new regulation.
- An Executive Order was signed by the President on October 28, 1994 -- which stipulates that field duty means a training exercise, not a deployment in the traditional sense. This change immediately helped the troops that had deployed to Kuwait.
- The Department kicked off a review of the subsistence allowance, to perhaps redefine its composition, and possibly to propose major reforms.

Together, these changes will improve the compensation program for members of the armed forces and their families, and these investments constitute a sound means of preserving near- and medium-term readiness.

Promotions

Promotions and compensation go hand in hand. There are indications that servicemembers are concerned about promotion rates falling during this restructuring period. It is a common misconception that promotions have been frozen because of the drawdown, but that is simply not the case. Last year, the

Services promoted over 125,000 soldiers, sailors, airmen, and marines into the top five enlisted grades (E5-E9) -- a promotion, on average, for each enlisted member of once every five years.

Generally, promotions have remained steady during the drawdown. There has been only a slight increase in the average promotion time for some grades and skills. Promotion opportunity has also held steady, generally remaining within 5 percent of the levels the Department saw before the drawdown began. For the future, the Department expects promotion points will improve and promotion opportunity will remain steady.

Retention

During the past seven years, active military strength has dropped by more than 500,000. While some additional strength reductions are planned, the Department remains committed to achieving them on a voluntary basis to the greatest possible extent. To date, more than 95 percent of the drawdown has been accomplished through normal 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). The success of these voluntary programs has enabled DoD to maintain reasonable promotion flows, to largely avoid involuntary separations, and to demonstrate a continuing commitment to treat people fairly -- both those who stay and those who leave. A more detailed discussion of retention is found in the appendices to this report.

Separation and Transition

DoD is making sure that those leaving are treated fairly for the sacrifices made while serving their country. The Department remains steadfast in its commitment to offer those leaving military service a wide range of transition services and benefits. A private research firm found that the DoD transition program is much more comprehensive in terms of the types of services provided than many private sector programs.

Since the beginning of the all-volunteer force, DoD policy has recognized that a positive quality of life in the nation's armed forces is a vital element of defense capability. Its commitment to treat people right has helped attract the best people to serve in the nation's defense. Transition support and services are a vital part of treating members right, even as they prepare to leave military service and embark upon new careers. This common sense approach to military separation is essential for the well-being of all military members. For more information on transition support to servicemembers, see the chapter on Quality of Life.

THE CIVILIAN WORKFORCE

Regionalization of Civilian Personnel Services

In 1993, the Department initiated a monumental restructuring plan for regionalization and systems modernization of civilian personnel services. DoD, with Service input, has conducted an extensive analysis of civilian personnel functions and developed a servicing model that identified those functions that could be most efficiently consolidated in regional service centers. The evaluation confirmed that with proper investment, regionalization and automated systems modernization (Defense Civilian Personnel Data System (DCPDS)) are both achievable and cost effective. DoD's regionalization and systems modernization efforts will result in reduced operation and maintenance costs, standardization of civilian personnel management applications throughout DoD, interoperability with other DoD functional areas, and easy access to real-time management information for managers. Regionalization and systems

modernization will also significantly improve the Department's personnel servicing ratio (with a 33 percent savings in personnel specialists) by taking maximum advantage of business process improvements. There is the potential for five new regionalized centers each year from FY 1995 through FY 1998.

Modernization of the Automated System

The Department is radically redesigning personnel processes to achieve major improvements in performance. Through data standardization, DCPDS now supports 85 percent of all DoD civilians. A transition plan has been developed to encompass the remaining DoD employees in the near future.

DCPDS applications have resulted from extensive reengineering of personnel processes. Some of those computer applications will give current and projected civilian personnel costs; maintain, rank, and report job applicants for DoD jobs; significantly reduce response time to inquiries; integrate automated job classification, staffing, performance management, and training requirements in a single document; enable users to electronically request training, evaluate results, produce reports, and track requirements and expenditures; and enable personnel staff to access information on employee compensation claims and associated costs immediately. For DCPDS's reengineering work, *Government Executive Magazine* presented DoD with a 1994 Outstanding Achievement Award for Making Government More Effective through the Use of Information Services.

The Department also joined the Office of Personnel Management to found the Federal Human Resources Management Automation Consortium to develop and market software applications to other agencies. Showcased at the DoD Human Resources Reinvention Laboratory in Crystal City, Virginia, these applications have been seen by visitors from other government agencies and private industry from all over the world. The Department will continue to develop and implement the Strategic Information Systems Plan for DCPDS and for automated systems to support regionalized off-site human resource service delivery.

Civilian Downsizing and Transition Assistance

Since September 1989, DoD has reduced its civilian end strength by about 220,000 or almost 20 percent. To minimize involuntary layoffs, the Department has aggressively implemented a separation-pay or buyout program. Under this program authorized by Congress in 1992, DoD offers cash incentives -- up to $25,000 -- to employees who resign or retire. The buyout is available to employees when it will prevent an involuntary separation or create a vacancy for an employee who would otherwise be separated. To date, the Department has paid close to 50,000 incentives, avoiding significant RIFs throughout the Department and protecting the diversity of its workforce. The Department's program is the model for the Federal Workforce Restructuring Act which allows non-defense agencies to offer buyouts to facilitate reductions without involuntary separations.

DoD continues to use other highly effective programs to help civilians find new jobs. The most notable is the Priority Placement Program (PPP), an automated system that matches employees who are scheduled to be separated with vacant DoD positions for which they are qualified. Since its inception in 1965, PPP has placed over 120,000 employees. The Defense Outplacement Referral System (DORS) is another automated system that refers applicants to federal and non-federal employers. DORS and PPP give employees alternatives to separation. These options will be increasingly important as the Department closes additional installations and seeks to minimize the adverse impact on individuals. Additional information on DORS can be found in the Quality of Life chapter.

In addition to extending the drawdown and transition authorities until September 1999, the National Defense Authorization Act for FY 1995 included a provision that allows the Department to establish a pilot program at closing and realigning bases. To further encourage private-sector employers to hire DoD's surplus people, the Department's new pilot program will not only reimburse employers for retraining costs but will also pay relocation expenses for employees who move to take a job with a non-federal employer. These incentives, limited to $10,000 per employee, will make surplus employees more valuable to other employers while avoiding the cost of unemployment insurance compensation. The Department remains committed to minimizing the number of involuntary separations, assisting those employees who may have to separate, and protecting workforce diversity.

Civilian Training and Education

The Department spends approximately $500 million annually on civilian training tuition, materials, and related travel. Prior to this year, the expenditure was not based on the kind of systematic, universal, readiness-based program as that used to justify military training, education, and opportunities.

This year, DoD launched a major effort to provide a more universal, comprehensive, and systematic program of civilian career and leader development to enhance support of the changing national security objectives of the Department. During this year, an Office of the Secretary of Defense and component civilian personnel leadership group began developing the program by inventorying all civilian training and leadership development programs to provide a first-time menu of opportunities for all civilians, reviewing all internally and externally mandated civilian training programs, and beginning a study of a return-on-investment model for training and career development. These redesign efforts will be tied to the Department's automation initiative for civilian training -- TRAIN -- which has been developed by a multi-component working group and is now being tested. This comprehensive redesign effort in civilian career and leader development responds to the President's call for greater and smarter investment in human capital.

CONCLUSION

DoD will continue to treat all of its active duty, reserve, and retired servicemembers fairly. Service in the armed forces will continue to be a great career choice. When the downsizing is complete the Department will still have 1,400,000 people on active duty and over 900,000 in the Selected Reserves. The Services will continue to recruit over 200,000 people each year for active duty forces -- as well as over 150,000 for the Selected Reserves -- to maintain the proper mix of junior, mid-career, and senior servicemembers.

Finally, DoD's overarching goals are to maintain a high state of readiness and to treat people fairly. That means servicemembers of all grades will continue to receive exceptional training and educational opportunities, challenging worldwide assignments, and the best equipment. Advancement opportunities are excellent, particularly when compared to private sector career options. The bottom line is that with good duty performance, career-oriented servicemembers can expect to see steady advancement, professional training and education, and challenging leadership opportunities.

FINANCIAL MANAGEMENT REFORM

INTRODUCTION

The Department of Defense is amidst the most comprehensive reform of financial management (FM) systems and practices in its history. These reform efforts are driven by two pressing needs: first, the need to overcome decades-old problems in financial management systems and procedures; and second, the need to lower administrative costs by fundamentally redesigning the Department's fiscal operations.

Last year's Annual Report highlighted FM problems confronting DoD -- billions of dollars in disbursements not matched to specific obligations, overpayments to defense contractors, Antideficiency Act violations, DoD accounts with excess disbursements, issuance of paychecks to soldiers after their discharge, and so forth. In spite of rigorous efforts to keep the Department's FM systems operating effectively, DoD leaders have recognized that these systems require major overhaul.

UNDERLYING CAUSES OF DOD FINANCIAL MANAGEMENT PROBLEMS

DoD's manifold FM failures reflect an antiquated bureaucratic organizational structure coping unsuccessfully with the complexities of modern government and business. During the past 50 years, the Services and other DoD organizations developed their own operating procedures and accounting systems to accomplish their missions. In 1991, DoD had some 250 finance and accounting systems, most incompatible with each other. As the missions undertaken by the Department became more complicated, DoD organizations were forced to interact with each other, revealing a lack of DoD-wide standards for data and procedures, among other things. Rather than redesigning its organization or standardizing its FM systems, the Department developed ever more complicated business practices, which attempted to preserve the individual bureaucratic organizations while coping with more demanding operating requirements.

For example, it takes about a hundred paper transactions among a dozen organizations to make a progress payment on a complex weapon system. Within DoD, different organizations use different and inconsistent approaches to do similar tasks. They use computer programs, for example, with different names and concepts to deal with parallel problems. All these forces produced business practices that were complex, slow, and error-prone. No matter how skilled the people operating them, the Department's FM systems and processes were inherently handicapped in their efficiency and effectiveness.

The Department over the years has worsened its operations by adopting unacceptable operating procedures to deal with problems. For example, in response to legitimate complaints by business that the government was slow in paying its bills, DoD responded by adopting flawed business practices, which provided for payment of bills without adequately checking underlying accounting records for availability of funds. In sum, the Department confronts decades-old problems deeply grounded in the bureaucratic history and operating practices of a complex, multifaceted organization.

BLUEPRINT FOR REFORM

Understanding the underlying causes of the problems is only the starting point for reform. During the past year, the Department has developed a blueprint to reengineer its business practices to eliminate these long-standing problems. Some of the elements of the reform blueprint predate this Administration, while many are new this year. The key elements of the blueprint are discussed below.

Consolidate Finance and Accounting Operations

The establishment of the Defense Finance and Accounting Service (DFAS) in 1991 was a giant step forward for the streamlining of DoD's financial systems, with DFAS becoming a pivotal agent for key financial management reforms. A major DoD streamlining milestone was last year's announcement of 26 sites selected for consolidation of DFAS operations. This will curtail the time consumed by the vast

challenge of coordinating the work of nearly 300 original sites. Streamlining operations into fewer locations also will better enable DFAS to focus its energies on the standardization and modernization of systems and procedures. Finally, this streamlining should result in a substantial savings in both people and money.

Consolidate Finance and Accounting Systems

DoD FM systems are of two types: (1) finance systems, for processing payments to DoD personnel/organizations and contractors; and (2) accounting systems, for accumulating and recording operating and capital expenses as well as appropriations, revenues, and other receipts. In 1991 when DFAS was established, DoD had some 250 of these systems.

Consolidating and standardizing finance systems under DFAS is well underway. Three years ago the Department had 18 separate military payroll systems; today there are 11 -- and by 1996, the number will be down to two or three. For payroll operations for DoD civilians, the new Defense Civilian Pay System (DCPS) will soon provide the Department with a standard, fully automated system that will improve productivity, reduce support costs, and provide standard data to interrelated accounting and personnel systems. By the end of FY 1996, almost all DoD civilians will be paid through DCPS. When fully implemented, DCPS will result in the elimination of 18 civilian pay systems and the closure of 353 payroll offices.

Greater obstacles and less rapid progress are likely for the streamlining of DoD accounting systems. Most of the Department's 163 major accounting systems were designed to meet only the unique requirements of their users. Moreover, these systems must continue to operate as consolidation takes place. Nonetheless, the Department finally has a cogent, integrated plan for modernizing its accounting systems.

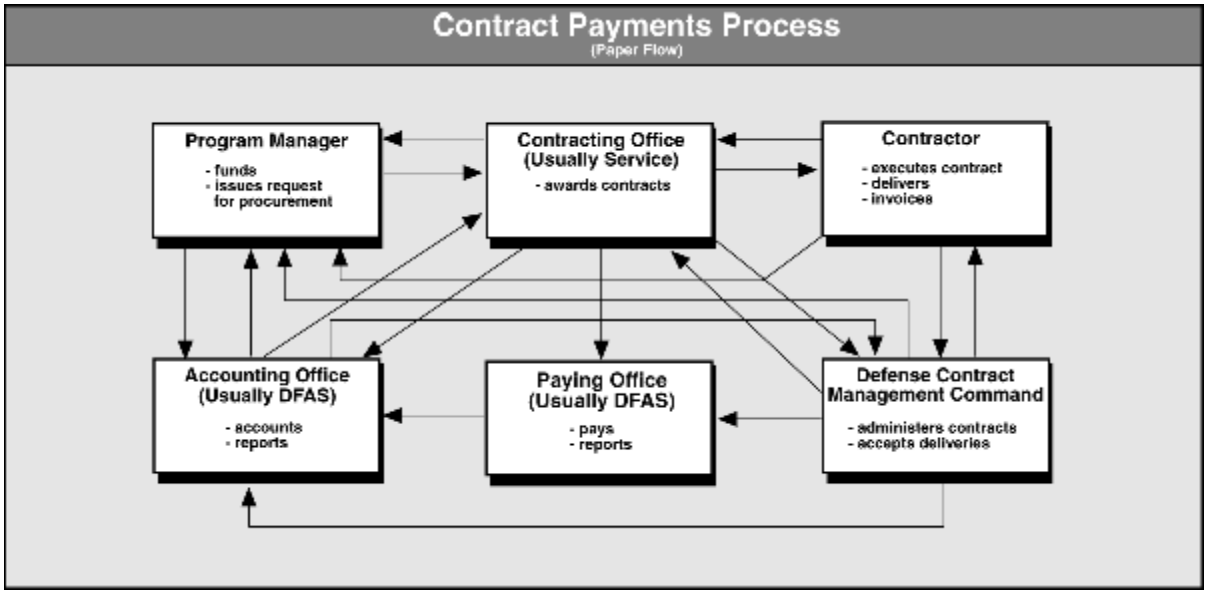
Establish Pre-validation for Disbursements

One of the actions DoD is taking to prevent future instances of unmatched disbursements is to require the validation of proposed payments with the corresponding obligation data in official accounting systems prior to making payments. Beginning in July 1995, DoD will require such validations for all payments over $5 million. In October 1995, that threshold will drop to include all payments over $1 million. In addition, the Department is developing plans to expand this validation requirement to cover all payments.

Reengineer DoD Business Practices

Much of DoD's support activity involves interaction between financial and nonfinancial systems. One important example is the interaction between the nonfinancial acquisition processes by which weapons are developed and the financial systems that process payments to the private contractors from whom those weapons are procured.

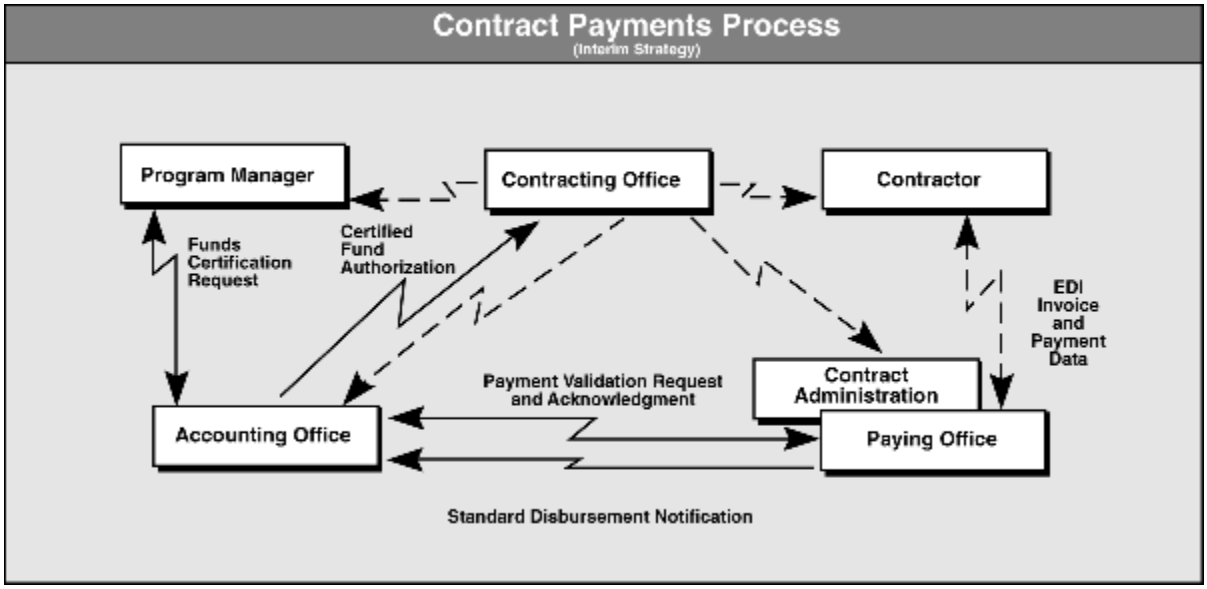
The chart below shows the flow of approximately one hundred transactions typically required for payment incident to a procurement contract. From the chart, one can appreciate the complexity of contract payments, given that each type of organization depicted uses automated systems designed to serve its needs, rather than to facilitate interaction with others. For example, data and information coming into one of these organizations generally must be entered manually, because it cannot be easily passed from one automated system to another.



The following chart depicts critical initiatives in DoD's interim strategy for simplifying and improving the processing of procurement payments for contracts administered by the Defense Contract Management Command (DCMC.) (Much of the dollar value in unmatched contract disbursements comes from DCMC-administered contracts.)

On the chart, the dashed lines show the improvement resulting from electronic data interchange (EDI) using national standards (ANSI X12EDI transaction sets). This use of EDI will substantially cut down on manual data entry and greatly improve the data integrity between the contract payment and accounting systems. The solid lines show electronic data transfers using internal DoD transaction formats.

Beyond this interim strategy, DoD plans greater use of standardized EDI transactions and further simplification of the interactions between offices involved in contract payments.



The simplification of business practices also is the goal of two initiatives to expand the use of commercial credit cards:

- A federal government-wide credit card is being used in DoD to acquire and pay for selected small purchases. The Department is pursuing expanded use of this card to simplify payments for its large volume of small purchases.
- The federal government's travelers cards are now being used by some DoD travelers to charge expenses for official trips. Expanded use of this card promises to reduce the cost of processing official travel expenses.

Strengthen Internal Controls

The Department is working vigorously to strengthen its internal FM controls and prevent fraud. As detailed above, reengineering the contract payments process and other business practices offers the greatest promise for minimizing discrepancies in DoD disbursements. However, until that long-term reform is fully in place, DoD is taking interim steps to reduce disbursement discrepancies. To that end DFAS, in conjunction with DoD components, established a project to reduce the current backlog of unmatched disbursements. This effort has focused not only on clearing existing unmatched transactions, but also on improving existing procedures and systems, which are the systemic causes of this serious problem. Through the joint efforts of all parties involved, unmatched disbursements have been cut in half. In 1995, the project team should reach its new goal of cutting unmatched disbursements in half again. Other actions to reduce disbursement discrepancies include new policies aimed at terminating disbursements in overdisbursed accounts and requiring that a disbursement be matched to an obligation before actual payment is made, as discussed above.

To help address a systemic cause of unmatched disbursements, the Acquisition and Financial Management Panel was established. The panel is co-chaired by the Under Secretary of Defense (Comptroller) and the Principal Deputy Under Secretary of Defense (Acquisition and Technology). It includes the Under Secretaries of the Army, Navy, and Air Force, as well as the DFAS Director and the Commander of the Defense Contract Management Command, a component of the Defense Logistics Agency. It focuses primarily on improving the interconnectivity between finance and acquisition systems.

The Department is being proactive in both detecting fraud as well as preventing it from occurring in the first place. In each case where fraudulent actions have been discovered, the Department has reviewed the circumstances that permitted such actions, thoroughly assessed changes needed to preclude such fraud from recurring, and disseminated that information along with corrective guidance to all activities performing similar functions.

The security of information on DoD's automated networks continues to be a major priority. The Department's information systems are vulnerable to unobserved alteration and lack audit trails sufficient to identify system penetrators. To remedy these and related weaknesses, the Department has taken strong actions to ensure compliance with existing security procedures; created an active fraud detection and prevention unit, as part of ongoing efforts to minimize fraudulent attack against DoD's financial assets; formed a task force to analyze computer security weaknesses; and initiated actions to streamline and clarify security policies and procedures.

Another way in which DoD is strengthening internal controls is to improve the collection of debts, for example, from separating servicemembers. DFAS has implemented its state-of-the-art Defense Debt Management System (DDMS), which is resulting in more timely deposit of payments, reduced work needed to bring about collections, and increased attention to debt avoidance. Over the next three years, these and other measures should cut in half the amount of new debts within the Department and markedly improve debt collections.

Improve Management Incentives

Financial systems can create strong incentives to influence management actions, and DoD systems need to do this better. In the past for example, DoD operational leaders neither knew nor could determine the total cost of their purchasing options, such as whether to repair or replace a damaged piece of equipment. Consequently, leaders made decisions that minimized the cost to their organization, even though those decisions may have driven up the total cost to the Department.

The previous Administration undertook actions to correct this problem when they created the Defense Business Operations Fund (DBOF). DBOF seeks to ensure that all relevant costs are included in prices used by DoD leaders in deciding between options for logistics and other support services.

Problems with DBOF have been caused primarily by flawed implementation. To solve those problems, the Department undertook a thorough review of the Fund, resulting in a DBOF Improvement Plan released in September 1993. The Plan endorses the original DBOF goal: to provide better information for decisionmakers through total cost visibility and full cost recovery. It also outlines 56 actions necessary to improve the operation and management (O&M) of the fund in four categories: (1) accountability and control, (2) structure, (3) policies and procedures, and (4) financial systems. The Department has now completed nearly all these actions.

Significant reforms include the establishment of a DBOF Corporate Board to oversee DBOF improvement and operation, improved policies and procedures, and selection of migratory finance and accounting systems to support DBOF operations. The DBOF Corporate Board has ensured full DoD-component participation and support of the improvement efforts. The combination of better policy guidance and fewer, more responsive financial management systems should ensure better information and financial management in DoD business operations as well as reduce costs.

Advance Building Blocks for Long-Term Reform

The standardization of data, definitions, and concepts is critical to long-term DoD plans to consolidate its FM systems and optimize compatibility between them as well as with nonfinancial systems. Moreover, accumulation of data can be valid only if it comes from organizations with common bases for determining that data.

DoD's 250-plus finance and accounting systems have been managing some 100,000 different data elements. Detailed data modeling has shown that DoD financial operations could be conducted with fewer than 1,000 carefully designed standard data elements. During the past year, most of these standard data elements were defined. These now will be used in future DoD efforts to streamline and improve its financial processes.

Data standardization is critical as DoD consolidates its financial systems and moves toward sharing common processes and data under an open systems environment. It also facilitates long-term DoD improvements in the management of data resources, by taking advantage of technological advances that allow managing data as a shared commodity -- separate from the programs and applications using the data.

As part of its standardization effort, the Department has two important initiatives for its accounting systems:

- DoD is moving toward adoption of a standard general ledger consistent with the federal government's standard, which will enable better summarization and reporting of financial transactions. Today, the Department has many disparate and deficient general ledgers that produce inconsistent and unreliable financial information.
- DoD's recently established standard budget and accounting classification architecture will provide a mechanism for financial information to be recorded consistently in the general ledger and reported properly.

SUPPORTING INITIATIVES

Chief Financial Officers Act

The Chief Financial Officers (CFO) Act of 1990 has helped the Department to identify and better focus on its FM deficiencies and define the standards by which progress can be measured. The Department currently submits audited financial statements for the Army, Air Force, and DBOF each year as required under the CFO Act. The next major task for the Department is the incorporation of the Navy under this Act. While compliance with the Act and other statutory requirements is motivation for reform, the Department's long-term reforms reach beyond that goal.

Consolidation of Financial Management Regulations

One cause of DoD's FM problems has been that policies often differ from one DoD component to another. This condition exists partly because, when the Under Secretary of Defense (Comptroller) issues policy guidance, that guidance is not always uniformly disseminated by DoD components. Instead, they frequently interpret the guidance and publish internal implementing procedures. Too often, different component interpretations result in the inconsistent application of DoD policies.

In response to this situation, the Comptroller is issuing a single DoD Financial Management Regulation for use on a DoD-wide basis. The regulation promulgates guidance involving the Department's appropriated funds, DBOF, and other revolving funds. The initial effort -- the consolidation, clarification, and expansion (where applicable) of Comptroller guidance -- is well underway. In the next phase, individual DoD component regulations will be eliminated or incorporated into the consolidated DoD regulation, as appropriate. This effort is expected to eliminate over 70,000 pages of sometimes conflicting guidance and provide the Department with standard policies and procedures.

Federal Managers' Financial Integrity Act

In FY 1994 the Department initiated major modifications to its implementation of the Federal Managers' Financial Integrity Act (FMFIA). The goal was to make the best possible use of the annual FMFIA process to diagnose and solve deficiencies in DoD internal financial controls.

The new plan requires senior functional managers in OSD to identify systemic internal control deficiencies plaguing the entire Department. In addition to complying with FMFIA requirements, this will prioritize reform efforts of the Services, defense agencies, and unified commands, who execute the operational internal controls of the Department. At the same time, the Department's FMFIA process will continue to encourage DoD components to identify and resolve internal control problems that are unique to them.

The FY 1994 DoD Annual Statement of Assurance reflects the implementation of this new approach. In doing so, the statement is brief and concise in its reporting. Rather than a multitude of individual

problems reported independently by various DoD components, the statement discloses the Department's systemic control weaknesses and the corresponding supporting initiatives of the DoD components. This initiative also reflects more substantial management improvement activities that are ongoing throughout the Department; for example, acquisition reform, business process reengineering, and financial management reform.

Government Performance and Results Act

As part of its efforts to improve management incentives, DoD is developing performance measures for DoD activities and linking these measures to budget decisions as envisioned by the Government Performance and Results Act (GPRA) of 1993. Performance reporting will supplement financial reporting and performance information required by the Chief Financial Officers Act, provide a framework for management improvement, and support the allocation of resources through performance budgeting.

The GPRA also requires identification of output and outcome measurement in budget formulation and management. In exchange for this accountability, the law promotes increased managerial flexibility. The Under Secretary of Defense (Comptroller) is responsible for facilitating, coordinating, and overseeing the Department's implementation of GPRA. Within DoD, implementation of GPRA is well underway and includes:

- Pilot projects to test performance measurement, managerial flexibility, and performance budgeting.
- Education and training for DoD's military and civilian leaders to enable them to develop mission statements, formulate strategic plans, set goals, develop quantifiable measures, and analyze operational effectiveness.
- Formulation of DoD corporate goals and measures.

National Performance Review

The Administration's 1993 National Performance Review recommended modernizing federal financial management processes and services, making them more efficient and business-like, and improving their reliability. Following the Review's recommendations, DoD is working to reduce or eliminate -- where appropriate -- the financial restrictions associated with appropriated accounts, so that financial managers have greater flexibility to set priorities and solve funding problems at the lowest suitable operating level.

Other Review-related actions involve DoD's O&M accounts, such as using O&M funds to incur family housing O&M-type costs and structuring the FY 1996 budget to fund noncentrally managed procurement in the O&M account. The latter action should help local installation managers avoid pitfalls in DoD's acquisition process: redundancy, multiple layers of controls, and unnecessary constraints.

Oversight of DoD Contracts

DoD actions to streamline and improve the procurement process include the reduction of contract audit oversight at DoD contractors with good business systems. One example involves the Defense Contract Audit Agency (DCAA) and DCMC working together with contractor executives to strengthen contractor internal control systems. Better contractor controls should reduce unallowable costs initially charged to DoD and lessen the need for DoD audit oversight.

In a related effort, DCAA has several initiatives to reduce the backlog of incurred cost audits, which must be performed before most contracts can be closed. The goals are to reduce the number of overage

government contracts, avoid loss of DoD funds, improve contractor cash flow, and reduce the time required to close government contracts.

During FY 1994, DCAA issued over 68,000 audit reports, examining about $275 billion of federal government contract actions. During this period, DCAA audit recommendations resulted in savings or cost avoidance to the government in excess of $3.9 billion.

Travel Reengineering Initiative

Reform of the temporary duty (TDY) travel system for all DoD organizations is the objective of the DoD Task Force to Reengineer Travel, whose recommendations are now being reviewed. The goal is to design an equitable TDY system that will meet the operational mission requirements of the Department, improve service to the customers of the system, and reduce the overall cost to the government.

CONCLUSION

The Department's current leadership recognizes that nothing less than fundamental and comprehensive change to DoD financial processes and systems is acceptable. Such change is now well underway with some successes already evident. In other cases, full success must await the consolidation of systems and facilities, the full implementation of better business practices, or the fielding of new hardware and software. However, the delay and expense of these actions are compensated by the reality that their foundation is the most fundamental reform of financial processes and systems since the Department of Defense was established nearly five decades ago.

INFRASTRUCTURE AND LOGISTICS

INTRODUCTION

The Department continues to actively manage infrastructure and logistics in this era of changing national security requirements and shrinking forces, in order to improve long-term military readiness. As a result, DoD has made substantial progress towards attaining the appropriate balance between providing the proper level of services and support for the military forces and reducing unneeded overhead activities.

As in last year's report, a very broad definition of infrastructure and logistics is taken -- it includes everything, except for intelligence, that is not part of the operating forces. The areas of infrastructure and logistics described here are Force Management, Central Logistics, and Installations Support. The other areas are covered elsewhere in this report.

FORCE MANAGEMENT

Force Management includes the various headquarters organizations that provide guidance and direction to either the Department as a whole or to multi-Service organizations, and defense agencies, which are centralized organizations that provide a particular type of function or service to all elements of the Department. These are support functions that should be reduced in line with the drawdown in forces without impacting readiness.

Following the direction from last year's Defense Agency Review, the Department developed new civilian resource guidance for FY 1994-2001. This guidance accelerates and increases previously programmed reductions through FY 1999 and implements direction contained in the National Performance Review and the Federal Workforce Restructuring Act of 1994. DoD components have the flexibility to shift work years within their allocations to properly align resources and ensure operating forces receive the support and services required.

CENTRAL LOGISTICS

Managing Distribution and Inventories

The Department manages millions of items to sustain its weapons 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 drastically 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 95 has included distribution depots as candidates for further downsizing. Distribution depots will be sized to meet the storage and throughput requirements associated with DoD-wide inventory levels, which are projected to continue to decline.

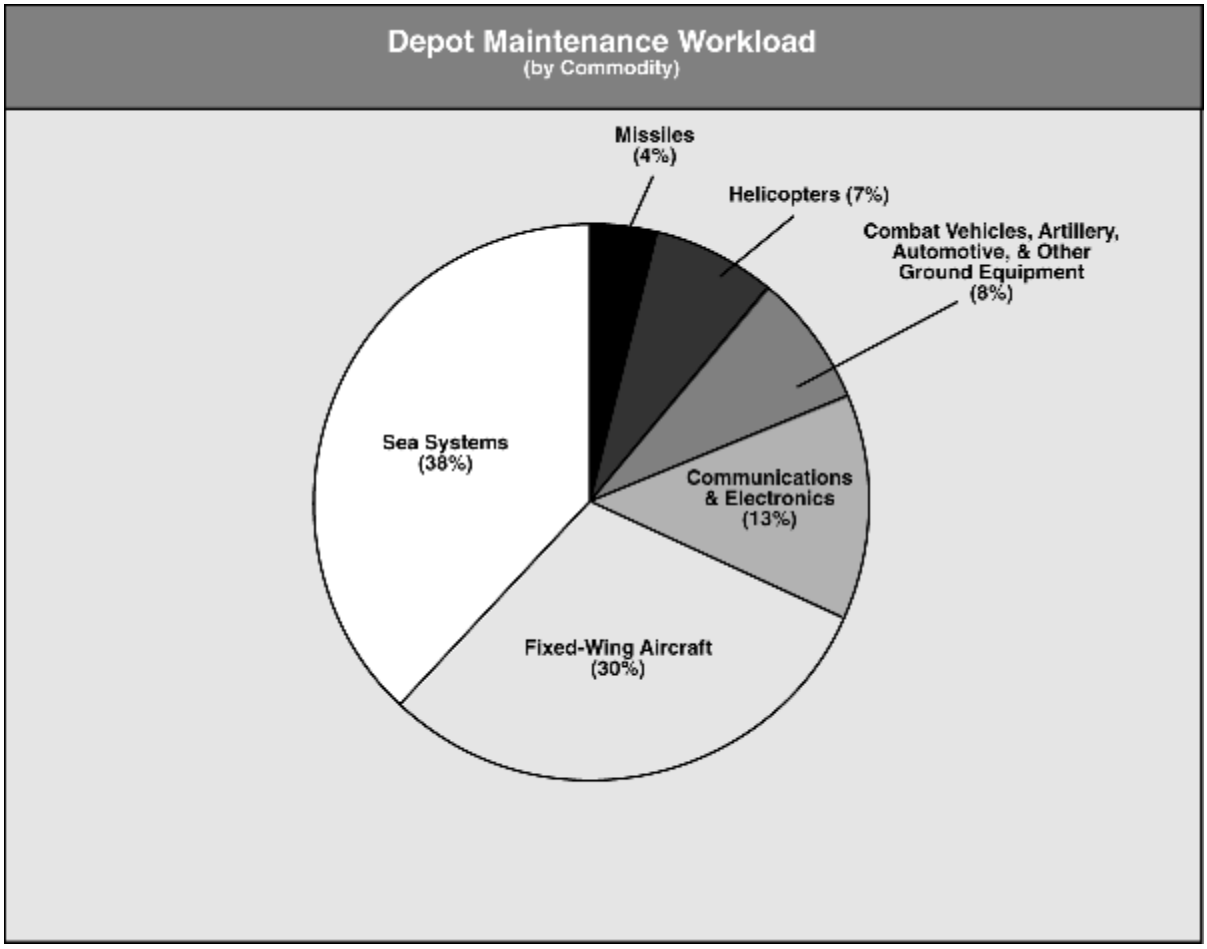
- Inventory reduction. The Department has been pursuing an aggressive inventory reduction program since 1990 and has already reduced inventories from $98.9 billion to $77.5 billion through FY 1993 in constant 1993 dollars. Current projections for inventory reductions are an additional $3 billion through the end of FY 1994. These reductions will generate an inventory of approximately $65 billion in 1995; by 2001 the inventory should be about $50 billion in constant 1993 dollars. Disposal actions have also increased from $10.9 billion in FY 1991 to $28.9 billion in FY 1993, the last year for which statistics are available.
- The Department of Defense Total Asset Visibility (TAV) Initiative. Total Asset Visibility is the ability of the DoD logistics system to gather information about the quantity, location, and condition of assets anywhere in the logistics system at any time and to apply that information to improve logistics processes, such as filling customer orders and improving the handling of shipments or the repair pipeline. TAV provides visibility of unit materiel and personnel during deployment and redeployment. TAV also provides an essential management tool to customers, item managers, weapon system managers, and Commanders in Chief (CINCs) to move and redirect materiel, redistribute items rather than buy or repair them, and optimize stock positioning in operational areas overseas. A joint government/industry asset visibility conference was conducted in March 1994 where many best practices in industry were identified. Initial efforts to share asset visibility information and materiel among the Air Force, the Navy, and the Defense Logistics Agency (DLA) were implemented in August 1994. The Army has initiated actions to participate in this joint effort. A Total Asset Visibility Joint Task Force was established in August 1994 to institutionalize and expand on these efforts and to make TAV a reality in the near term.
- 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 to the customer. One means of doing this is by making more direct deliveries of consumable items from vendors to customers. The Department is concentrating on reducing logistics response times as a prime initiative. Reducing response times will strengthen overall military readiness through better support for more mobile forces, improved capability for responding to multiple contingencies, and minimizing investment in inventory, facilities, and related infrastructure. A process action team has been formed and has as its goal identifying and implementing improvements in achieving a five-day delivery time for in-stock consumable and reparable items by FY 1997.

To wrap initiatives such as these into a coherent plan, last year the Department developed a Logistics Strategic Plan. The plan provides strategies for achieving more reliable, cost-effective, and prompt service while concurrently reducing the Department's infrastructure. Priorities in the plan have been included in the Planning, Programming and Budgeting System to obtain resourcing and permit oversight. The Department will assess implementation progress and update the plan later this year.

Depot Maintenance

REQUIREMENTS

The Department spends approximately $12 billion annually for depot maintenance of weapon systems and equipment. Workload, broken down by commodity, is shown in the following chart. Analysis by Service reflects the Navy possessing approximately 59 percent of the total DoD depot maintenance business base; Air Force, 27 percent; Army, 13 percent; Marine Corps, approximately 1 percent; and DLA, about 0.1 percent.



DEPOT MAINTENANCE CORE

In November 1993, the Department implemented a CORE methodology aimed at preserving the critical skills housed in the public maintenance depots. CORE is defined as the capability maintained within the organic defense depots to meet readiness and sustainability requirements for weapon systems that support Joint Chiefs of Staff (JCS) contingency scenarios. It is comprised of skilled personnel, facilities, and equipment necessary to ensure a ready and controlled source of required technical competence. CORE requirements are calculated by the Services in accordance with OSD-approved methodology designed to ensure consistency throughout DoD. The Services are well along in their efforts to identify and quantify the depot maintenance capabilities that are required to maintain their systems in a high state of readiness and to provide a robust surge capacity.

DEPOT MAINTENANCE TASK FORCE

In response to guidance contained in the FY 1994 National Defense Authorization Act, the Department chartered a Government/Industry Task Force on Depot Maintenance under the auspices of the Defense Science Board in January 1994. The report of this Task Force was forwarded to Congress in April 1994. The Task Force recommendations included:

- Replace 60/40 (60 percent government -- 40 percent contractor depot maintenance work) and other legislative restrictions with a concept consistent with the Department's CORE policy.

- Fully implement CORE policy to replace the current workload split with a balance of validated Service CORE workload requirements in public depots and non-CORE workload in the private sector.
- Eliminate public-private and public-;public competition. Aggressively pursue financial management initiatives to provide for better management of the depot maintenance business area.
- Design, develop, manufacture and, generally, install major modifications and upgrades on weapon systems in the private sector.

The Department accepted most of the Depot Maintenance Task Force recommendations, but concluded that CORE should be viewed from an overall DoD perspective rather than on an individual Service basis. Actions to implement the task force recommendations regarding financial management improvements and performance of major modifications in the private sector have been initiated. The Government/Industry Depot Maintenance Task Force dissolved after completing its work and submitting its report and recommendations. However, a Defense Science Board Depot Maintenance Task Force has been established to continue the work to identify needed improvements and opportunities for reducing maintenance support costs in 1995.

DEPOT MAINTENANCE COMPETITION

As recommended by the Government/Industry Depot Maintenance Task Force, the Department has discontinued competitions for depot maintenance workloads. The task force and other studies and audits found that financial management and data systems of the Department and Services were not capable of supporting cost competitions for depot maintenance workloads. The Department is working to improve financial management and data systems to accurately and reliably portray costs of individual depot maintenance workloads. Intensive efforts are currently underway to develop financial management and data systems that will create a level playing field between organic depots and private sector sources. The success of these efforts is a prerequisite to reinstitution of depot maintenance cost competitions. In the interim, merit-based procedures are being used to support source of repair decisions for defense depots.

INTERSERVICING DEPOT MAINTENANCE WORKLOADS

The Department is aggressively pursuing opportunities to increase interservicing, whereby one Service provides depot maintenance support to another, particularly among fixed wing aviation depots. Interservicing of depot maintenance workloads is important in conserving resources and eliminating unneeded capabilities within the Department's depots. The Defense Depot Maintenance Council, chaired by the Deputy Under Secretary of Defense (Logistics) with senior logisticians from each of the Services, the Joint Staff, and the Director of DLA as members, oversees the interservicing program and gives a high priority to identifying opportunities for future interservicing actions. The goal of the Department is to size the depot maintenance infrastructure commensurate with the force structure it will support.

Logistics Business Systems Modernization

Significant progress has been made in developing, modernizing, and implementing standard automated information systems in the logistics business areas. These systems were designed using a process which modeled current practices, developed reengineered processes, and then reviewed existing defense and other public and private sector systems to achieve a modular approach to integrating and interfacing those best business practices which will provide functional process improvement across the Department. These systems and processes will support an annual logistics business cost of more than $44 billion, involving more than 2.2 billion transactions from more than 1,000 locations in the processes of acquiring, maintaining, and distributing an inventory valued at more than $77 billion.

This effort will standardize logistics data and processes across all components. Standard data facilitates implementation of technologically advanced automated support. Visibility and management of assets are enhanced through data sharing which is possible only in a standard data environment. High levels of data accuracy and reliability diminish the uncertainty under which major logistics business decisions are made. This approach will provide a major enhancement to the Department's operating efficiency and to the responsiveness of its support to the joint warfighters in the areas of materiel management, depot maintenance, distribution, transportation, and medical logistics.

Implementation of a standard materiel management system will make uniform the processes of inventory control, requirements determination, order processing, reparables management, and technical support. Development of the Materiel Management Standard System (MMSS) has been redirected from organic to private sector development. The major system developers for MMSS are now under contract, with implementation targeted for October 1996. Elements of the MMSS will initially be deployed in FY 1995 at the Warner-Robins Air Logistics Center (WR-ALC) in Georgia. Fielding a standard material management system to all DoD components will result in improved support to readiness, greater efficiency, phasing out approximately 150 legacy applications, and an estimated savings of some $14 billion through FY 2005.

Depot maintenance functions include project management for end item repair, production management for reparables repair, hazardous materiel management, tool control, facilities and equipment maintenance. Implementation of a standard depot maintenance system by all Services will result in faster return of weapons and equipment to the joint warfighters, increased economies through interservicing and joint use of maintenance facilities, phase out of approximately 100 legacy systems, and an estimated savings of $4.56 billion through FY 2005. Various applications of the Depot Maintenance Standard System (DMSS) have already been fielded and completion is scheduled for FY 1997.

Distribution depots receive, store, and issue DoD assets. The standard distribution system will be fully implemented by FY 1996 phasing out six legacy applications. The Distribution Standard System (DSS) is being developed by the Defense Logistics Agency which has the distribution mission for the Department. This effort is the centerpiece of the Logistics Standards Systems effort in terms of management and results. By the end of FY 1995, some 80 percent of all DoD distributions will be under the DSS. For a 5-year investment of about $190 million, savings of approximately $590 million will be realized by FY 2004.

The Defense Medical Logistics Standard Support (DMLSS) program (a joint effort of the Deputy Under Secretary of Defense for Logistics and the Assistant Secretary of Defense for Health Affairs) will integrate the logistics functions of medical materiel and services with commercial practices, provide more products and services faster for lower costs, and eliminate redundant maintenance and overhead of eight Service and DoD legacy systems. One segment of the DMLSS program, the Prime Vendor Program (Pharmaceuticals), has been implemented at 130 sites.

Further enhancing logistics business systems modernization is the Continuous Acquisition and Life Cycle Support (CALS) strategy. CALS, which uses integrated data through a set of standards to achieve efficiencies in business and operational mission areas of the Department, will enable DoD to accomplish new ways of doing business through weapons system programs, infrastructure modernization, and industry. These new business methods will be used for virtual enterprises, agile environments, integrated product and process development, and cross-functional information sharing. The expected results include a significant reduction in cycle time of a weapon system, increased readiness, decreased costs, and improved quality.

Two major prototype efforts have been approved for this fiscal year as an initial effort to evaluate the effectiveness of the CALS strategy as well as to create an integrated data environment (IDE) through the utilization of multiformat information. This is being accomplished via the use of existing programs, such as the MMSS, DMSS, DSS, the Joint Computer-Aided Logistics System (JCALS), and the Joint Engineering Data Management Information Control System (JEDMICS). The first at Warner-Robins Air Logistics Center involves the integration of the standard logistics systems and the various CALS components at WR-ALC. It is expected that these systems will be integrated and that the JCALS Global Data Management System (GDMS) will be exercised extensively as will the Configuration Management Information Systems (CMIS). These efforts will be integrated with the standard logistics systems in materiel management and depot maintenance as they are installed and populated at WR-ALC. The second effort in support of the Naval Sea Systems Command (NAVSEA) will expand the WR-ALC effort via the integration of multiple repositories, both internal and external to the DoD, providing access to the right technical data, in the right format to multiple users via the standard logistics systems.

Transportation

Transportation is one of the primary functions of the DoD logistics system and constitutes a significant portion of the system's total cost. In FY 1994, DoD's worldwide transportation program cost over $10 billion. This program supported the movement of material, personnel property, and the maintenance of transportation infrastructure services. Ongoing initiatives are achieving savings by reducing transportation costs, improving transit times, and reengineering transportation business processes.

The National Security Strategy requirement to sustain two nearly simultaneous regional conflicts, combined with a minimization of investment in war reserve inventory, has required DoD to cut inventories and distribute materials into common-user stockpiles to support multiple theaters. The capability to rapidly transport these stocks between theaters and maintain visibility of material in storage and transit is essential to the success of this new logistics doctrine.

A major transportation initiative and part of the Department's TAV effort is to achieve Intransit Visibility (ITV), the capability to identify and track the movement of defense cargo as it moves in unit deployments and redeployments along with tracking passengers, medical patients, and personal property from origin to final destination during peace and war. Currently, a prototype Global Transportation Network (GTN) system is being developed to support an integrated DoD ITV capability. Improving ITV translates into reduced procurements and inventories and a shorter pipeline. This will result in significant cost savings, but will place greater demands on the transportation system for expedited delivery. Building a unified, common-;user, TAV capability that reaches from the unit, depot, and vendor to the foxhole continues to be one of the Department's highest ongoing logistics priorities.

The Department of Defense relies on the commercial transportation industry to meet over 80 percent of its peacetime and wartime transportation requirements. The DoD is developing partnerships with the transportation industry to promote a better understanding of military requirements and commercial capabilities to allow for maximum utilization of industry's extensive intermodal capabilities. These partnerships will include best-value acquisition of transportation services, with a requirement for carriers to provide Electronic Data Interchange (EDI), Electronic Funds Transfer (EFT), and ITV.

Other transportation efforts that promise business process improvements and significant cost reductions are the Joint Transportation Corporate Information Management Center (JTCC) and the Defense Transportation EDI initiatives. The JTCC will standardize transportation migration systems to ensure that duplication in systems is avoided. The Defense Transportation EDI initiative is reducing manpower, time, and paper flow currently required for acquisition of and payment for transportation services. Finally, a

review of transportation infrastructure is being initiated to ensure that the Department has in place and is maintaining at appropriate levels only the transportation infrastructure necessary to effectively support JCS peacetime and contingency requirements.

INSTALLATIONS SUPPORT

Meeting the Challenge of Installation Readiness

The responsibility for stewardship of defense installations is challenging in today's dynamic national security environment. DoD has a base structure which is still too large for the reduced force structure it supports. Infrastructure reductions resulting from the 1988, 1991, and 1993 domestic closure rounds have left a base structure that remains larger than is required. The context is also marked by declining facility conditions which adversely affect readiness. The Department's historical inability to renew its physical plant on a realistic schedule is having inevitable consequences. Most of DoD's facilities date from the 1940s, 1950s, and 1960s. Lower DoD budgets have forced priority setting among essential maintenance and repair projects, leaving managers with difficult, often uneconomical, choices between fixing critical problems and funding long-term preservation and cost-reducing projects.

Within anticipated funds, the Department's installation efforts are focused on achieving the following three objectives:

- To successfully use the BRAC process to properly size the Department's base structure while meeting responsibilities to impacted communities.
- To support military readiness and quality of life with sufficient, high-quality facilities at the lowest life-cycle cost.
- To improve installation management while meeting energy and environmental mandates.

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

Resizing the Base Structure

The base structure of the Department has not decreased commensurate with reductions in military forces. While significant progress has been made in reducing overseas base structure, domestic closures have lagged behind. The Secretary of Defense has made reducing the Department's unneeded infrastructure through domestic base closures and realignments a top defense priority. While there has been good progress so far, there is more that must be accomplished. BRAC 95 is the last round of closures authorized under public law. Significant reductions in infrastructure and overhead costs can be achieved only after careful studies address not only structural changes to the base structure, but also operational and organizational changes, with a strong emphasis on eliminating duplicative capabilities through increased reliance on inter-Service use of common support assets.

During the late 1970s and 1980s, DoD had been effectively stopped from closing domestic bases by a number of legislative requirements. To remedy this, Congress authorized the 1988 Defense Secretary's Commission on Base Realignment and Closure. This legislation provided a process in which the Commission -- rather than the Department -- made closure and realignment recommendations. The 1988 Commission consolidated a Cold War force level at fewer installations. In response to the decreasing world threat and declining defense budget, Congress authorized new Commissions in 1991, 1993, and 1995. These Commissions review (and can change) base closure and realignment recommendations made by the Secretary of Defense. In all cases, the President and Congress must accept or reject the Commission recommendations in their entirety.

There are three guiding principles to the Department's BRAC process -- improve military effectiveness, save money by reducing overhead, and conduct a fair and objective selection process. Balancing DoD base and force structures and preserving readiness through the elimination of unnecessary infrastructure are critical.

The 1988 Commission approved 16 major domestic bases for closure, plus a larger number of small sites. The 1991 Commission approved 26 major domestic closures, and the 1993 Commission approved 28 major closures. Together, the three Commissions will have reduced domestic base structure by about 15 percent (measured by plant replacement value). Table V-4 illustrates the current projected costs and savings anticipated for these three closure rounds as of the FY 1996 budget submission.

The BRAC selection process uses two fundamental building blocks to develop recommendations for domestic base closures or realignments -- the approved final selection criteria and the six-year force structure plan. The Services and defense agencies have established ad hoc executive level groups to perform detailed analyses and make recommendations to the Service Chiefs and Service Secretaries. Ultimately, those recommendations are provided to the Secretary of Defense for his approval before being submitted to the Commission. The Secretary's recommendations for BRAC 95 are due to the Commission by March 1, 1995.

Table V-4

BRAC Financial Summary -- DoD-Wide($ million)

	BRAC 88	BRAC 91	BRAC 93	TOTAL
BRAC Savings	2,352	6,306	7,630	16,288
BRAC Costs	1,931	3,296	6,320	11,547
Net Savings	421	3,010	1,310	4,741
Environmental Costs	819	1,342	1,705	3,866
Annual Savings	685	1,599	2,043	4,327

* After 6-year implementation period.

NOTE: From FY 1996 President's Budget.

The base closure process has evolved from lessons learned during the 1988, 1991, and 1993 processes. For 1995, the Department is putting greater emphasis on cross-service coordination and asset sharing, and has established five functional Joint Cross-Service Groups to review Depot Maintenance, Medical, Undergraduate Pilot Training, Test and Evaluation, and Laboratories. These areas are considered to have the highest interservicing potential. The Department has also created a Joint Cross-Service Group on economic impact to establish guidelines for DoD components to measure the economic impact of base closure and realignment alternatives, including cumulative economic impact from past BRAC actions. The group will also analyze DoD component recommendations under these guidelines and develop a process for analyzing alternative closures or realignments necessitated by cumulative economic impact considerations, if necessary.

In implementing base closures, the Department applies its experience from prior closure rounds. DoD helped develop the President's Five-Part Community Revitalization Program (discussed in the chapter on Economic Security) and is working on implementation policies which support the President's program.

The process of transitioning military bases into productive reuse is driven by three competing, but not mutually exclusive, goals:

- First, rapid disposal of the property saves money by relieving the Department of maintenance, repair, and operating costs, and in some cases by generating revenue through land sales or leases.
- Second, close cooperation with the local redevelopment authority promotes rapid redevelopment and the creation of new jobs.
- Third, the closed bases are often important resources sorely needed for other important public purposes, such as homeless shelters, airports, educational facilities, and parks.

Even in large cities, a military base often represents a significant economic stimulus for the local economy, and closure can be a serious blow to the local community. Traditional federal property disposal methods focused on maximizing proceeds from the sale of real and personal property with little regard for the prospect of local economic recovery. The President's revitalization program speeds the economic recovery of communities where military bases are scheduled to close. The new procedures from this program give increased priority to early reuse of the base's valuable assets to speed redevelopment and to create new jobs.

Supporting Readiness and Quality of Life

The Department faces huge challenges as steward of the world's largest dedicated infrastructure. Wisely managing a physical plant valued at about $570 billion and about 42,000 square miles of land roughly the size of the state of Virginia requires engineering insight, business acumen, and sufficient resources. Base closures and overseas disposals have significantly reduced that infrastructure and continue to influence the domestic scene. However, the Department must continue building new facilities required to relocate missions from bases designated for closure, replace uneconomical and deteriorated facilities, and support new or expanded missions.

The foremost facilities challenge for the Department is to rightsize the infrastructure based on the downsized force structure. As bases close, the emerging challenges are to tailor the remaining plant to support the Department's diverse missions and to modernize and adequately maintain those facilities needed to support long-term readiness of the remaining force.

The ability of defense facilities to support and enhance military readiness depends on the condition of those assets. Deteriorated facilities undermine readiness in two principal ways. First, deteriorated facilities are more likely to fail, and facility failures may directly compromise the mission. This was a lesson learned during mobilization for Operation Desert Shield. Dilapidated rail lines at several bases could not effectively move trains carrying equipment and supplies. Portions of aircraft runways failed due to repairs being deferred. One pier came dangerously close to collapsing during the off-loading of an aircraft carrier because repairs to the underwater structure had been postponed.

Deteriorated facilities also impair readiness by lowering the quality of life of military and civilian families, and lowering the efficiency of uniformed and civilian workers. Poor facilities and quality of life detract from retention of highly qualified and motivated personnel. Well constructed, properly equipped, adequately maintained facilities help to improve personnel performance. Thus good facilities are force multipliers; they enable and motivate forces to improve productivity without an increase in their numbers. A key focus area in military quality of life is family and bachelor housing. The facility initiatives being undertaken in this area are described in the chapter on Quality of Life.

The Department recognizes the link between facility conditions and readiness. As the last in the current series of domestic base realignments and closures are announced in FY 1995, DoD must revitalize its efforts to modernize its enduring facilities, replacing or repairing those that are in serious disrepair. Besides their adverse effect on the mission and people, deteriorated facilities are expensive. They require

more maintenance, often on an emergency basis. They waste utilities since they typically lack energy-conserving systems and materials. They interfere with the mission since they often lack utility capacity to accommodate today's modern technical equipment.

At some enduring military installations, facility capacity, even after consolidations, may exceed anticipated requirements. Continuing to operate and maintain facilities which are not needed in the long term is bad business. The Services are identifying where excess capacity exists and which missions they could consolidate. If facilities are truly excess, the Services will dispose of or demolish them. This is expensive in the near-term, particularly when a facility to be demolished contains asbestos or other contaminants. However, consolidating missions and eliminating unneeded facilities saves money in the long run.

To provide high quality facilities in a way that balances near-term costs with optimal efficiency, the Services are designing new or revitalized facilities with the most up-to-date technological features. Value engineering during the early stages of a project's design frequently improves the quality and reduces the cost of new construction or repairs.

The Department routinely uses economic analyses and life-cycle cost studies in deciding among alternatives for acquiring, repairing, or replacing needed facilities. These analyses and studies help ensure the decision is not solely based on initial construction costs, but also on the lowest total cost of ownership. Life-cycle cost calculations include at least the costs for construction, utilities, maintenance, repair, and operations for the various alternatives.

The Department is also looking for opportunities to leverage its resources by using private sector capital to help finance critical needs for new housing and facilities or repair of existing assets. DoD is investigating a wide range of possible opportunities, some of which may require authorizing legislation.

Improving Installations Management

The concept of Excellent Installations management has a proven track record and will continue to be the cornerstone of the Department's effort to improve quality of life. This is reflected in an integrated facility management approach that is improving installation management policies, guidelines, and tools. The Department is developing and implementing a vigorous program of energy and water conservation. Complementing conservation, utility procurement policies are being changed to reduce the Department's annual energy bill by buying in bulk and taking advantage of rebates for demand reduction. Policy improvements are communicated with installation commanders each year at the DoD Installation Commanders' Conference. This conference and the Commanders' Forum give commanders and DoD policymakers an opportunity to discuss new policies and improve upon existing ones.

Broad authority has been given to installation commanders through DoD Directive 4001.1 to determine the best means of accomplishing their missions and to buy what they need from the source that provides the best product at the best price. Additionally, funding policies for support services are being changed to provide maximum incentive to commanders and managers to efficiently manage their mission and to use other governmental resources when effectiveness and efficiency would be served. Excellent Installations management is recognized annually with the Commander in Chief's Award for the best installation in each Service and the Defense Logistics Agency. Also, the ideas generated and lessons learned by the award winners are passed on to other commanders throughout the Department to help perpetuate excellence.

Achieving excellence in installations management requires integrating facility maintenance and investment decisionmaking. Installation commanders have traditionally developed facilities master plans to guide their capital improvement programs. Today there is a movement toward integrating these capital improvement programs with plans for maintenance and repair of existing infrastructure. One tool being developed for this is the Condition Assessment Survey, mandated by Congress. These assessments are designed to accurately define and analyze facility conditions and optimize maintenance funds for the best long-term benefits. Prototype testing of these surveys was completed in December 1994, and results are now being evaluated. Service-unique condition assessments also show promise. The Air Force developed a new Commander's Facility Assessment system and employed it to make priority investment decisions for the FY 1996 President's Budget. The Navy continues to refine its Base Reporting (BASEREP) system. The BASEREP has been employed for more than 10 years to link facility maintenance requirements with the commander's assessment of mission impact. The Army is fielding Installation Support Modules (ISMs) to provide installation staffs with effective automated management tools that are standard Army-wide. Starting in 1995 the ISMs will be part of the Army Sustaining Base Information Services that will reduce hardware/software costs and modernize the Army's sustaining base infrastructure.

The Department continues to seek more effective, less costly means of providing essential services at its bases. DoD's goal is to provide excellent, not merely adequate, services. One way of achieving this is through promoting competition among in-house work forces and private contractors. The evaluation of alternative means for providing essential services and the award of work to the best-value provider results in those services being delivered with more quality at a lower cost.

Another way of achieving excellence at less cost is to properly size facility resources which will remain after closures are accomplished. Demolition of facilities which are excess to needs and in poor condition will save repair, security, and energy costs. Attention will be focused on this in the next programming cycle. Opportunities may also arise to cancel leases or sell lands, after the required screening, which are no longer required by the Department.

The Department of Defense is also the largest centrally managed energy consumer in the United States. The Department consumes three-fourths of the energy used by the federal government. It costs nearly $3 billion each year to heat, light , and cool the 2.5 billion square feet of DoD floor space throughout 400,000 diverse buildings around the world. The Department cannot afford to waste energy nor allow its mission to become dependent upon imported fuels. Conversely, the scope of the Department's operation provides an opportunity to reduce government costs by nearly $1 billion each year once the necessary capital investments have been made.

The Department has a long history of leadership in energy cost containment through active participation in state utility regulatory proceedings. Increasing budget constraints will make such efforts and related emphasis of energy efficiency even more important in the coming years. Energy efficiency does not mean shutting off energy supplies, reducing the mission, or making people uncomfortable. There are many opportunities to use new technology that will, in fact, improve performance and comfort while reducing energy consumption and costs. For the most part, it requires a long-term strategy with investment today to save energy tomorrow.

The National Energy Policy Act and President Clinton's Executive Order 12902 are helping the Department focus on these energy-saving opportunities. Additional funds are being provided in the Department's budget for energy conservation, and the Department is reorganizing to provide additional emphasis and resources to accomplish the goals of the new legislation and executive order.

The primary energy goals of the Department are to reduce facility energy consumption by 30 percent and industrial energy consumption by 20 percent by the year 2005. In addition, DoD is required to identify and accomplish every energy and water conservation measure that has a payback of 10 years or less. Progress toward meeting these goals depends upon increased investment funding. The reduction goals are achievable and the Department is currently on track.

Installation managers are also challenged today to meet the cleanup, compliance, and conservation requirements from environmental mandates. DoD managers are looking for smart ways to achieve these goals, in some cases at a cost savings where pollution prevention technologies offer opportunities for resource reutilization. A full discussion of this topic is found earlier in Part IV of this report.

CONCLUSION

The Department has continued its efforts to ensure an appropriate level of infrastructure and logistics in relation to the reductions in forces. A shrinking base structure, aging facilities sorely in need of adequate maintenance and repair, and a dwindling defense topline make this a particularly challenging era. By implementing the initiatives explained above, the Department intends to properly size infrastructure and logistics, support readiness and quality of life, and manage its installation costs effectively and efficiently.

RESEARCH AND TECHNOLOGY

INTRODUCTION

The Department continues to place a high priority on its Science and Technology (S&T) program. The goal of this vital program is to produce technologically superior weapon systems for the warfighter within current fiscal realities. New economic realities demand development of weapon systems that are not only technically superior, but are affordable, longer lived, and improved through the integration of new technology into existing systems. The Department of Defense continues to develop the technology required to maintain the technological superiority of its military while also supporting the nation's economic security. DoD will take advantage of economies of scale and utilize those cutting edge technologies that are available from the commercial sector.

DEFENSE SCIENCE AND TECHNOLOGY STRATEGY

The S&T Strategy requires technology to be developed which will ensure affordable, decisive military capability and enhance the economic security of the United States. In the past, technological superiority was the all encompassing thrust of the strategy. In the new strategy, technological superiority remains the hallmark of the S&T program, but economic security and affordability are also given priority.

Under Cold War acquisition policy, the United States maintained separate defense and commercial industrial bases. With the end of the Cold War, the Department has dramatically reduced procurement and can no longer support a separate system of suppliers. It is essential that the Department be able to access the latest commercial technologies and be able to benefit from the volume production of items which incorporate dual-use technologies developed by the Department. In addition, the Department must utilize commercial standards and products wherever possible. The S&T program contributes to building a dependable base of suppliers of reliable, low cost products through the exploitation of commercial technology, practices, and processes, where possible, and by transitioning defense technology to the private sector. These contributions are exemplified by the dual-use technology program, including the Technology Reinvestment Project (TRP).

THE SCIENCE AND TECHNOLOGY PROGRAM

The S&T program is divided into three elements: basic research, exploratory development, and advanced technology development. These elements relate more to budgeting and accounting than to program execution. The S&T program and the advancement of technologies are a continuum, not discrete phases. Basic research is the element of the S&T program that increases knowledge and understanding of science. It is the foundation on which future technological superiority is based. Twelve fields of inquiry comprise the basic research program (Table V-5). The majority of the work in the basic research program is conducted at universities and DoD laboratories, with the remainder in industry, nonprofit research institutes, and other federal laboratories.

Table V-5

Basic Research Program Investments

Atmospheric and Space Science	Materials Science
Biological and Medical Sciences	Mathematics
Chemistry	Mechanics
Cognitive and Neural Sciences	Ocean Sciences
Computer Sciences	Physics
Electronics	Terrestrial Sciences

The exploratory development and advanced technology development programs develop technologies to provide options to satisfy military requirements. The exploratory development program provides proof of concept experiments and evaluations built around models and laboratory experiments. The advanced technology development program evaluates the effectiveness of the technological advances in providing the required military capability. Technology efforts within the Department are centered around a group of 19 technology areas (Table V-6).

Table V-6

Technology Areas

Aerospace Propulsion and Power	Electronic Warfare and Directed Energy Weapons
Air Vehicles and Space Vehicles	Environmental Quality and Civil Engineering
Battlespace Environments	Human Systems Interface
Biomedical	Manufacturing Science and Technology
Chemical and Biological Defense	Manpower, Personnel, and Training
Clothing, Textiles, and Food	Materials, Processes, and Structures
Command, Control, and Communications	Modeling and Simulation
Computing and Software	Sensors Conventional
Conventional Weapons	Surface/Under Surface Vehicles and Ground Vehicles
Electronics	

PRIORITIES OF THE S&T PROGRAM

Information technology, sensors, and modeling and simulation are high priority S&T programs. Information technology and sensors have the potential to significantly improve all aspects of future military capabilities, while modeling and simulation have already made major contributions to readiness. These technologies can significantly reduce the cost of war in terms of both lives and equipment. One notable shortcoming of Operation Desert Storm was, for example, the inability of coalition forces to manage, integrate, and provide the information required by the warfighter in a timely manner. The amount of tactical information available today far exceeds one's ability to process the information and provide it to the user in near-real time. As combat systems become more and more sophisticated, the time available to complete necessary combat functions grows shorter, leaving little time for processing of information.

Behind the front lines, the management of enormous amounts of data related to logistical support is an increasingly important and demanding requirement. Today, there is excessive ordering to ensure equipment and supplies are on hand; however, information technology programs offer an alternative solution. Advanced computer software, computing systems, and communication technology are essential to sort through reams of data and present the user with information in a form that permits instant recognition and action. They can also assist warfighters with information updates or assist in accounting for supplies via sensor and computer link.

The front line for information gathering is the sensor. To know, to know more, and to know it sooner than the enemy is to have the advantage. The sensor spectrum covers situational awareness, target identification and discrimination, and targeting. Military forces need to see through foliage and camouflage, under water, and through the earth's surface to counter the enemy threats. The military also has a need to know if weapons of mass destruction are being produced, where, and in what quantity. The S&T program invests in the sensor technologies needed to provide these capabilities.

Modeling and simulation are very powerful tools that have a myriad of high payoff applications. The S&T program is examining the use of modeling and simulation to evaluate the potential payoff of new technologies during concept formulations and as the basis for planning and prioritizing DoD's S&T

investment. Modeling and simulation can be used to assist the commander in training, planning, and employment of U.S. forces. It is a very cost-effective means of maintaining readiness and is becoming increasingly important in addressing that high priority need.

ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS

The Advanced Concept Technology Demonstration (ACTD) program is the integrating effort involving the user and the S&T community. ACTDs are focused on four principal points: (1) to gain an understanding of and to evaluate the military utility before committing to acquisition, (2) to develop corresponding concepts of operation and doctrine that make best use of the new capability, (3) to provide residual operational capability to the forces, and (4) to facilitate a more informed acquisition decision.

The ACTDs are heavily user-oriented and considered user-dominated. The user manages the operational aspects of the demonstration while the S&T community provides the advanced technology elements. ACTDs focus on specific military concepts whereas earlier efforts were more broad-based.

The intent of ACTD is to provide the user with detailed interactions very early in the development process as a means for a rapid and cost-effective introduction of new capabilities to operational forces. Some examples of ACTDs include unmanned air vehicles and prospective demonstrations in Cruise Missile Defense and Mine Countermeasures. ACTDs are discussed in more detail in Part III of this report.

DOD LABORATORIES

The DoD laboratories, operated by the military departments, are an essential part of the Department's research and technology infrastructure. They provide the technical expertise to enable the Services to be smart buyers and users. Under Office of the Secretary of Defense leadership, scientists and engineers from the laboratories are the central participants in the development of the DoD Technology Area Plans.

The DoD laboratories are both performers and purchasers of research and technology. They maintain core in-house expertise to supplement that available through industry and academia and to develop the knowledge needed for best-value acquisition. Simultaneously, they are responsible for accessing and enhancing industrial and academic capabilities in support of national security.

Like other elements of the DoD infrastructure, the laboratories are participating in the processes of reinvention and acquisition reform. The laboratory workforce will be reduced by the turn of the century. Accompanying this reduction in size are new personnel demonstration systems designed to reinvigorate in-house quality and new organizational structures and acquisition procedures that stress interaction and partnership with extramural performers.

In addition to their direct role in research and technology, the DoD laboratories are integral to the weapon systems acquisition process. The critical functions they perform in support of the Service Acquisition Executives include:

- Translation between warfighters' needs and technological opportunity, in both directions.
- Integration across the technologies, portions of the life cycle, related operational elements, and the many performers and contractors required to develop, build, and maintain weapon systems.
- Continuity and corporate memory.
- Rapid response with high grade technical knowledge to solve warfighters' problems as they develop.

- Direct support to acquisition commands -- the Program Executive Officers and Program Managers -- through technical expertise, contract management and other inherently government functions, training of the workforce, and matrix staff support.

In addition to directly supporting their military departments, the laboratories act as agents for many Advanced Research Projects Agency (ARPA), Ballistic Missile Defense Organization (BMDO), and other DoD components' research and technology programs. They are the principal working interface with the laboratories and technological developments of other agencies.

ADVANCED RESEARCH PROJECTS AGENCY

ARPA is the central research and development (R&D) organization for the Department of Defense. Its primary responsibility is to maintain U.S. technological superiority over potential adversaries. A core mission of ARPA is development and demonstration of revolutionary technologies that drive fundamental change in military capability. In addition, the changing security environment and the challenge of reducing the cost of Defense equipment in a reduced budget environment have increased ARPA's focus on dual-use technology R&D. ARPA's dual-use focus will meet critical defense needs by breaking down the barriers between the commercial and defense industries. This increased civil-military integration permits an increased pace of innovation in defense systems, with reduced cost. In addition, many leading-edge, defense-critical technologies, such as electronics, information processing, and communications, come from the commercial sectors of the economy.

ARPA Programs

ARPA programs are centered loosely in three categories: Core Technologies, Infrastructure, and Military Applications.

CORE TECHNOLOGIES

Core technologies include those technologies that provide the information technologies, software processes, materials, and components that are essential for meeting DoD system needs, now and in the future. These include technology areas in which ARPA has made sustained investments for many years and which must be supported in the future to maintain U.S. military superiority, and new technology areas that lead to further advances in military and industrial competitiveness. ARPA is:

- Supporting a very aggressive program in information technology designed to stimulate advances in computing and communications. Investment areas include R&D in scalable computing systems, intelligent systems, networking technologies including wireless and optical networks, and advanced software development.
- Sustaining a focus on electronics technology with the goal of providing the capabilities necessary to produce smaller, lower power, more mobile, and affordable defense commercial systems. ARPA is funding semiconductor and integrated circuit technology and low cost physical electronic packaging efforts that yield high performance multiple circuits, as well as the associated manufacturing process technology necessary to produce these products at an affordable cost. Optoelectronics, infrared circuitry, microwave and millimeter wave circuits, digital signal processors, display technologies, and integrated combinations of these components are examples of the electronics technology areas that ARPA is supporting.
- 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. This includes investments in both structural and electronics materials.

INFRASTRUCTURE

Infrastructure refers to those technologies and capabilities that enable the DoD to produce its materiel and train and care for its personnel. With the draw down of forces and decreasing defense budgets, there is a critical need to invest in R&D that can make the DoD infrastructure effective, efficient, and affordable. The trend continues to move toward a shared national infrastructure with greater reliance on the civil sector to support defense needs. ARPA is increasing its investment in the key infrastructure technologies to support defense needs and reduce the costs associated with the extensive DoD infrastructure:

- Design and manufacturing technologies to reduce product life-cycle costs by improving design efficiency and factory operations. For example, through investments in flexible manufacturing ARPA is promoting affordable and efficient volume-independent manufacturing.
- Medical technologies to provide medical care more quickly, with better knowledge, and at lower cost. ARPA is investing in 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.
- Education and training technologies aimed at improving the delivery and quality of training by exploiting advances in networking and artificial intelligence systems, authoring tools, and other information technologies to provide accessible, on-line instructional and research materials, on demand.

MILITARY APPLICATIONS

Military Applications include innovative technology developments in support of improved, affordable military capability. These investments focus on:

- Advanced combat vehicle concepts. The focus for air vehicles is on innovative concepts that can lead to more affordable aircraft that meet multimission and multiservice needs. Programs are focused on attack capability. For naval applications, modest programs for submarine technologies continue, and efforts for innovative ship design and construction technologies have been increased. A key factor is building a new relationship with the shipbuilding industry.
- Precision strike continues to be a critical investment area with emphasis on time-critical targets and weapons of mass destruction. This application requires innovation in surveillance, processing, and dissemination technologies. Major sensor emphasis is on advanced radar, electro-optical and infrared sensors, and miniature ground sensors.
- Command and control technologies and concepts developments that significantly improve battlefield management and provide superior decision support to commanders. This focus builds on ARPA's prior investments in information, electronics, and surveillance technologies. ARPA's investments in information and electronics technologies continue to be enablers to command and control technologies.

TECHNOLOGY REINVESTMENT PROJECT

The cornerstone of ARPA's dual-use efforts is the TRP. This project, along with other dual-use technology investments, significantly contributes to the integration of the military-commercial industrial base. Although TRP is a large program, it cannot address all technology and product areas. The program is focused on areas that are essential to future defense capability and that have potential for commercial products that can be inserted into Defense systems.

FY 1993 Update

Initiated in late FY 1993, the response to TRP was very enthusiastic. Over 2,800 proposals were received and evaluated by 300 evaluators from TRP agencies and military departments. The total number of proposals selected for funding was 212 (over $600 million that included $140 million of FY 1994 funds). The selections were diverse, representing 1,631 organizations, 46 states, the District of Columbia, and 5 foreign countries. Small businesses and universities were well represented. Successful TRP proposals were goal/customer oriented; represented well-balanced, well-structured partnerships; had high quality/credible cost sharing; demonstrated real industrial leadership; and had definite dual-use characteristics.

FY 1994 and FY 1995

Two solicitations were issued in FY 1994. As in FY 1993, there were statutory requirements that TRP efforts be competitively selected, specific participation was required (emphasis was on partnerships), cost sharing of at least 50 percent by non-DoD entities, and defense use emphasized.

The focused competition, which incorporated the following seven topic areas, closed in June 1994.

- High Density Data Storage Systems.
- Object Technology for Rapid Software Development and Delivery.
- Interoperability Testbeds for the National Information Infrastructure.
- High Definition Systems Manufacturing.
- Low Cost Electronic Packaging.
- Uncooled Infrared Sensors.
- Environmental Sensors.

Of the 238 proposals received, 175 were in the focus areas and 63 were in manufacturing extension programs. Manufacturing extension centers work directly with smaller manufacturers (fewer than 500 employees) to assist them in using technology to improve their competitiveness or reduce their dependence on defense customers.

All proposals were evaluated based on scientific and technical merit, technical approach and management plan, commercial and defense impact (e.g., dual use), and commitment to move the technology to products. The announcement of the selections for the focused competition was made on October 25, 1994. Thirty-nine new projects were selected which involve a total of 224 participating firms, universities, and laboratories from all over the country. In all, this represents a total DoD investment of $202 million matched by a similar amount of nongovernment money over the next two years.

The general competition was announced in the *Commerce Business Daily* on October 21, 1994. This competition represents approximately $400 million in technology development partnerships to include manufacturing education and training. Announcement of selections made under this competition is scheduled for third quarter FY 1995. Proposals are being solicited in the following dual-use technology areas:

- Biological sensors and multi-organ diagnostic screening.
- Affordable polymer matrix composites for airframe structures.
- Millimeter wave products.
- Electronic and hybrid tactical and commercial vehicles.
- Digital wireless communications and networking systems.

- Operations other than war.
- Affordable controls.
- Cryogenic coolers for electronic systems.
- Low cost specialty metals processing.
- Ceramic material applications.
- Small precision optics manufacturing technology.
- Microelectromechanical systems applications.
- Other.

BALLISTIC MISSILE DEFENSE ORGANIZATION

BMDO research and technology activities focus on component upgrades to existing systems such as Patriot and Aegis Standard Missile-2 and exploitation of promising technologies offering major advances in ballistic missile defense (BMD) system capabilities. These activities represent a cooperative effort between the BMDO, the Services, Defense agencies, federally funded R&D centers, and contractors ranging from large aerospace corporations to small businesses. Since the early 1980s, the BMD research, development, test, and evaluation (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.

RDT&E continues as the major portion of the BMDO program. Technology investments focus on the components that can enhance advances in performance of the programs currently in acquisition, ensure a reliable defense against new threats, and offer architectural options for future systems.

Functional technology areas include interceptors, directed energy, sensors, and innovative S&T. Development of more capable and lighter weight projectiles for exo- and endo-atmospheric applications is the main thrust of interceptor RDT&E. Advanced propulsion and guidance technologies, originally developed for ground-based interceptors, are being applied to a miniaturized, high velocity, air-launched missile for intercepting theater missiles early in their trajectories.

BMDO conducts limited 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. This end-to-end testing is scheduled for completion at the end of FY 1997.

BMDO continues 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 system 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 BMDO RDT&E efforts in a manner that enhances this technology transfer. For nine 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 that has enjoyed considerable success, working closely with government, universities, and industry.

Table V-7 lists representative RDT&E accomplishments and their importance to both BMD capabilities and transfer potential to the commercial sector.

In keeping with the BMDO focus on priority theater missile defense programs, BMDO transferred the Topaz space nuclear reactor research program in 1994 to the Defense Nuclear Agency (DNA) for future international cooperative research. Also, BMDO transferred to the Air Force the miniature sensor technology integration program for collecting space-based infrared data through a series of small quick-response spacecraft. BMDO also transferred to NASA the Single Stage Rocket Technology Program.

DEFENSE NUCLEAR AGENCY

DNA serves as the Defense Department's center for nuclear expertise, performing essential missions in the areas of nuclear weapons stockpile support, nuclear effects research and operational support, and nuclear threat reduction including arms control technology development. At the same time, DNA is increasingly active in a variety of non-nuclear technology areas through the application of its nuclear expertise to advanced conventional weapons' lethality, particularly against hardened and underground targets.

Last year, a congressionally mandated study by RAND's National Defense Research Institute confirmed the conclusions of earlier Office of Secretary of Defense, Joint Staff, and Defense Science Board studies regarding the synergism and economy inherent in the consolidation of these missions within one organization. The RAND study also recommended further consolidation of nuclear support missions as part of the streamlined nuclear weapons infrastructure essential to the maintenance of future nuclear deterrence. Further consolidation of DoD nuclear support missions is under review at this time.

Reflecting the findings of the various studies of the DNA mission over the past few years, DNA has embarked on a major organizational change. The Agency has instituted procedures to reduce manpower over the next few years to a level approximately half that of its peak strength in 1972. While exercising caution to ensure that proper attention continues to be given to nuclear matters, as highlighted by the RAND report, DNA will also continue to pursue more diversified missions, both to capitalize on a 50-year investment in advanced technology and to facilitate the recruitment and retention of the high quality staff which is the bedrock of nuclear expertise.

Table V-7

BMDO RDT&E

Research Area and Accomplishments	Impact on BMD Capabilities	Potential for Military and Civilian Applications
Sensors:		
- Superconducting quantum detector for High Sensitivity Focal Plane Array (FPA)	- Midcourse detection. Low noise Wavelength Division Multiplexer (WDM) receivers for test and evaluation & command & control centers	- Astronomical observation. Low noise WDM receivers for the National Information Infrastructure (NII)
- SiGe/Si heterojuncture internal photoemissive (HIT) detectors	- Silicon compatible FPAs sensitive in the 8-12 micron region	- Commercial remote sensing
- Electron tunnel sensor	- Uncooled sensor with the sensitivity of HgCdTe	- Commercial remote sensing
- Internal and externally cooled infrared windows	- Enables IR seeker operation at high velocity and low altitude	- High speed air-to-air or low altitude anti-cruise missile
Optoelectronic devices for:		
- High speed photonic networks	- High performance computing and communications for test & evaluation, simulation and Battle Management, Command, Control & Communications(BMC3)	- NII
- Terabyte optical storage	- Archival storage for test data	- Large public data bases, digital libraries, medical, commercial video, and other archival storage media
Electronic devices for:		
- Non-volatile semiconductor RAM	- Long life memory for theater operations	- Wireless communications smart highways
- Low temperature (10'K) digital and analog superconducting circuits	- Transceivers for broadband wireless backbones for telecomm High speed switching for Command and Control centers (e.g., NMIC)	- Multimedia centers
Computers:		
- WASP 3-D wafer-scale associative string reconfigurable processor	- Graphics engine for BMC3 and test & evaluation work station	- Visualization engine for multimedia
- 3DANN 3-D analog neural network processor	- Compact (1 cubic inch) low-power(1W) fast frame seeker	- Powerful neural network processor for real-time image processing and robotics
- JPL Metacomputer	- Teraflop performance for distributed simulation	- Teraflop performance for scientific computation
Communications:		
- Lasercomm 1 GHz transceiver	- High capacity jam-less backbone for sensor-to-shooter satellite downlinks	- Remote sensing from space
- Terahertz all-photonic fiber networks	- Terrestrial backbones for BMC3 and test & evaluation	- NII
- Broadband Millimeter transceiver	- Wireless backbones for BMC3 and test & evaluation	- International teleconferencing
Materials:		
- Non-linear electro-optic polymers	- Demonstrated for the first time room temperature spectral hole burning for dense memory	- High capacity cache for Teraflop supercomputers
- Wide band-gap semiconductors	- Demonstrated true blue laser diode, SiC nonvolatile RAM	- Thin screen color display Permanent memory at RAM access speeds
- Nanolithographically patterned quantum confined semiconductor materials	- Higher speed switching electronics resulting from smaller designed rules	- Advanced digital and anlaog devices for communications processing and simulations
Rocket Propulsion:		
- Solid propellant oxidizer(ammonium dimitramide, ADN)with higher energy but without environmentally questionable chlorine	- Reduces Booster requirements by 10% Eliminates environmental concerns Improves control of thrust profile	- Being considered as replacement propellant for Shuttle carried Low Earth to Geosynchronous transfer motors
- Energetic Oxetane Thermosplastic Elastomers	- Propellant manufacturing defects corrected by reheating and recasting Waste and reclaimed propellant reused without penalty	- Tri-service interest building integral part of several IR&D programs
- High-G Solid Divert and Attitude Control Propulsion	- Navy safe propulsion for hit-to-kill Interceptor systems	- Highly maneuverable missile systems inside or outside atmosphere
- Multiple Pulse Axial Motors	- Reduces divert requirements on hit-to-kill interceptors	- Flexible energy management for space motors
Power:		
- Solar array technology that includes concentrators and dual band-gap photovolaic materials	- 40% reduction in mass 60% reduction in cost Van-Allen radiation resistant	- Cooperative program with NASA and Air Force, Flight demonstration tests being augmented by communication satellite companies

Some of DNA's current mission challenges are:

- Management of the Department's nuclear stockpile. DNA develops and implements the procedures, systems, and supporting technologies to assure the safety, security, and reliability of the DoD nuclear stockpile. Additionally, DNA provides DoD-wide training and independent field inspections of the Services' nuclear weapons operational procedures and storage facilities. An up-to-date data base on the status of all nuclear weapons in DoD custody worldwide is maintained by DNA. The Agency also maintains a command center and response teams to react to nuclear accidents or incidents anywhere in the world.
- Weapon system operability. Given the proliferation of weapons of mass destruction and their means of delivery, success on tomorrow's battlefields may require military systems which can function during and after exposure to nuclear, chemical, and biological environments. Through its

Combined Battlefield Environmental Effects Protection Standards program, DNA is streamlining and simplifying the acquisition process for systems which must withstand multiple adverse environmental effects including electromagnetic, nuclear, biological, and chemical exposure. DNA technology also could be used to harden the sensitive microelectronics of commercial satellites against the potentially devastating consequences of natural space radiation. This dual-use technology program offers great potential for ensuring the continued U.S. business lead in the commercial satellite industry.

- Cooperative Threat Reduction Program. DNA serves as the program manager for the Nunn-Lugar/Cooperative Threat Reduction (CTR) Program which supports the safe, secure dismantlement of former Soviet weapons of mass destruction. DNA provides the technical expertise and contract management support essential to the implementation of the program's many agreements with Russia, Ukraine, Belarus, and Kazakhstan.
- Arms control verification technology demonstration. DNA's support to arms control has grown with the rapid expansion in the number and scope of treaties reached in recent years. DNA focus is on the identification, coordination, and development of technologies with arms control monitoring and verification applications.
- Counterproliferation technical support. DNA is concentrating on military response options to the proliferation of weapons of mass destruction and their supporting infrastructure. Specifically, DNA's program emphasizes optimized lethality, hard target kill capability, collateral effects research and prediction, targeting technical support and methodology development, and chemical/biological 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 Counterproliferation Initiative.
- Systems lethality. Underground and hardened facilities, often associated with weapons of mass destruction programs, represent a proliferating target set. Enhancing conventional means of destruction of these facilities, while minimizing collateral damage, is a top priority for DNA. Understanding hardened target design, response, and vulnerabilities across the spectrum of war is essential to future military operations.
- Scientific computing and information systems. High-performance computing capability is an essential underpinning to all of DNA's activities in nuclear and conventional weapons effects and their impacts on weapon system lethality, operability, and safety. Reflecting its heritage of 50 years involvement in advanced technology, DNA has some of the most sophisticated and complex models and codes in existence anywhere.

CONCLUSION

The capability to acquire huge volumes of information, process it, and pass it on to combatants on the battlefield is changing the face of war. Information technology continues to be the technology with the most promise and the most broad-based usefulness. The Department continues to focus on it as a very high priority. Information Technology enables a revolutionary change in warfare in many ways.

The Department proactively pursues dual-use technology, looking for opportunities for developing technology that will serve as a basis for both commercial and military products. The Department also looks hard for opportunities where technology can reduce costs and where the technology options that are put on the table serve both the defense and the economic security needs of this nation.

The development of the Department's S&T programs will continue to contribute to economic growth and competitiveness. The S&T program is balanced; addresses warfighting needs, technology reinvestment, and dual-use; and places a high priority on affordability.

To reach the goals of the S&T program, five management principles have been established. The management principles are transition technology to address warfighters needs, reduce costs, strengthen the commercial-military industrial base, promote basic research, and assure quality.

The Department has confidence that the investment in science and technology will continue to provide its armed forces with technologically superior military systems.

STRATEGIC NUCLEAR FORCES

INTRODUCTION

The mission of U.S. strategic nuclear forces is to deter a nuclear attack on the United States or its vital interests and to convince potential adversaries with access to nuclear weapons that seeking a nuclear advantage would be futile. In order to do this, the United States must maintain nuclear forces of sufficient size and capability to hold at risk a broad range of assets valued by potentially hostile nations.

The threat of a massive nuclear attack on the United States is much lower today than it has been in more than 40 years. Several developments have given rise to this situation, including the dissolution of the Soviet Union and Warsaw Pact, the recent entry into force of the Strategic Arms Reduction Talks (START) I Treaty and the expected future implementation of START II, and improved relations with Russia. Still, approximately 25,000 nuclear weapons continue to be deployed in Russia and on the territories of three other former Soviet republics. And even under START II, Russia will retain a sizable nuclear arsenal. Moreover, the future political situation in Russia remains highly uncertain. In addition, China is growing militarily and economically and has the potential to increase the size and capability of its strategic nuclear arsenal significantly over the next decade. Finally, several countries are attempting to acquire technology for nuclear weapons, medium- to long-range nuclear-capable missiles, or both. There is, therefore, a risk that potentially hostile nations could acquire a limited capability for long-range delivery of nuclear weapons in the next decade.

Two basic requirements thus guide U.S. planning for strategic nuclear forces: the need to provide an effective deterrent while conforming to treaty limitations, and the need to be able to reconstitute adequate additional forces in a timely manner should the positive trends in post-Cold War international relations be reversed.

FORCE STRUCTURE AND CAPABILITIES

Assuming that START II is implemented, the U.S. strategic nuclear arsenal by the year 2003 is expected to include approximately the following:

- 450 to 500 Minuteman III missiles, each carrying a single warhead.
- 14 Ohio-class (Trident) submarines, each capable of carrying 24 Trident II (D-5) submarine–launched ballistic missiles (SLBMs).
- 66 B-52H bombers equipped to carry a combined total of approximately 950 AGM-86B air-launched cruise missiles (ALCMs) and AGM-129 advanced cruise missiles.
- 20 B-2 bombers carrying up to 16 gravity bombs each.

By the late 1990s, the entire force of B-1B bombers is expected to be dedicated to conventional missions. While these aircraft would not be available for nuclear missions on short notice, given sufficient time and the requirement to do so, they could be returned to a nuclear role. The B-2 and B-52H forces also will be assigned conventional missions, while retaining their existing responsibilities as part of the U.S. nuclear deterrent.

Land-Based Intercontinental Ballistic Missiles

At the end of FY 1995, the U.S. land-based intercontinental ballistic missile (ICBM) force will consist of 530 Minuteman III ICBMs with three warheads each, 50 Peacekeeper ICBMs carrying 10 warheads

apiece, and about five single-warhead Minuteman II ICBMs. The last Minuteman II will be retired in FY 1996. Assuming START II enters into force, the number of Minuteman III missiles will decline to between 450 and 500 and all of these missiles will be modified to carry only one warhead each. With implementation of the START II Treaty, the United States will eliminate the Peacekeeper system by the year 2003.

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 several safety-enhancing features that are designed to reduce the risk of an accidental nuclear explosion and prevent molten plutonium from leaking outside the warhead in the event of a 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 United States is not developing or producing any land-based ballistic missiles. Furthermore, development of a new ICBM is not anticipated for at least 15 years. In part to forestall industrial base erosion, the procurement rate for Trident II (D-5) SLBMs is being slowed, thus extending production into the next century. The Department is also exploring new ways to preserve key industrial technologies; reentry vehicle and guidance technology are particularly problematic, given the lack of commercial applications. The FY 1996 budget provides funding to preserve a core of reentry vehicle expertise and the capability to manufacture specialized material. The budget initiates a similar effort in the area of guidance system technology; the support provided will ensure the United States retains an industrial capability to address guidance system problems and design prototype systems.

Sea-Based Ballistic Missiles

Nuclear-powered ballistic missile submarines (SSBNs) armed with long-range SLBMs will assume a greater share of the strategic nuclear deterrence mission if START II is implemented. Under START II, the SLBM force will provide about half of the 3,000 to 3,500 warheads that the United States will be permitted to deploy. SSBNs, which are very difficult to detect when at sea, are the most survivable and enduring element of the strategic nuclear triad. A significant portion of the SSBN force is on patrol at any given time, and all submarines that are not in the shipyard for long-term maintenance can be deployed during a crisis.

The U.S. SSBN fleet currently consists of 15 Ohio-class submarines; all older SSBNs have been phased out of the strategic inventory. Three additional Ohio-class SSBNs, now in various stages of construction, will be commissioned in 1995, 1996, and 1997, respectively. The final Ohio-class submarine, SSBN 743 (USS Louisiana), is scheduled to be commissioned in August 1997 and to make its first operational patrol in FY 1998. No new SSBNs or SLBMs are either under development or planned.

The Trident II (D-5) missile, which has improved range, payload, and accuracy relative to the Trident I (C-4) and all previous SLBMs, allows the SSBN force to hold at risk almost the entire range of strategic targets of any adversary. The first eight Ohio-class submarines carry the C-4 missile; the final ten have been or will be equipped, at the time of construction, with the newer D-5. The FY 1996 budget provides for continued procurement of D-5 missiles to support a 14-boat D-5 SSBN force. Four of the eight submarines currently carrying the C-4 missile will be retrofitted with the D-5 system at regularly scheduled ship maintenance periods. Under current plans, the other four boats will be retired by the time START II is fully implemented, leaving a total of 14 SSBNs armed with D-5s. These missiles, while

capable of carrying eight warheads, will be downloaded consistent with START II limits. This force of Ohio-class submarines will form the bulk of the U.S. nuclear deterrent for the indefinite future. The defense budget also continues to invest, albeit at a reduced rate, in SSBN security and survivability, which will be of continued importance as the SSBN force becomes the dominant component of the U.S. strategic deterrent.

Long-Range Bombers

At the end of FY 1994, the U.S. long-;range bomber force included 95 B-1Bs (84 primary aircraft inventory, or PAI) and 94 B-52Hs (64 PAI). The first three B-2 stealth bombers were delivered to the Air Force in FY 1994, and four more aircraft are scheduled for delivery in FY 1995. If current schedules and acquisition plans remain in effect, the Air Force will receive its twentieth, and last, operational B-2 in FY 2000.

Whereas in the past the size of the bomber force was determined largely by nuclear targeting considerations, the present force structure primarily reflects conventional warfighting requirements. Specifically, the bomber force is sized to meet the demands of two nearly simultaneous major regional conflicts while remaining a viable third leg of the nuclear triad. Because of the growing emphasis on conventional warfare, and also because all nuclear weapons acquisition and integration associated with the START II bomber force is complete, modernization efforts are aimed mostly at improving bomber capabilities for conventional missions. (The Aviation Forces chapter provides details on programs in this area.)

All three types of bombers in the force are able to deliver either nuclear or conventional weapons and could continue to do so under START I counting rules and weapons limits. However, the stringent counting rules and deep weapon reductions mandated by the START II accord will make it extremely difficult, if not impossible, for the United States to retain all of its bombers in the nuclear role. Under START II, B-1B bombers will no longer be counted as nuclear weapons carriers once the United States notifies Russia of its intentions to reorient these aircraft to an exclusively conventional role. (This transition is, in fact, already reflected in U.S. strategic operational planning, well ahead of the expected date of START II's entry into force.) By contrast, B-52Hs and B-2s will continue to have both nuclear and conventional capabilities. For example, a B-2 can carry up to 16 nuclear gravity bombs and a B-52H can carry up to 20 long-range cruise missiles. Under the terms of the START II agreement, conventional bombers must be based separately from bombers with nuclear roles, and conventional bombers may not participate in exercises or training for nuclear missions.

Finally, reductions have been made or are planned in the inventory of nuclear weapons for bombers. SRAM-A missiles, whose warheads lacked many of the safety features of newer designs, have been retired. Procurement of the AGM-129 advanced cruise missile was halted at 460 weapons in lieu of the original objective of 1,460. Moreover, some AGM-86B ALCMs have been converted for conventional use (and redesignated AGM-86Cs), and some gravity bombs and AGM-86B ALCMs have been retired or placed in dormant storage.

READINESS AND SUSTAINABILITY

Plans to ensure that the Minuteman III system can be maintained at least to the year 2010 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 in the Minuteman guidance system. Installation of the new guidance subsystems is scheduled to begin in November 1997. Minuteman III solid rocket motors will be overhauled to correct age-related degradation and to maintain system reliability. The first-

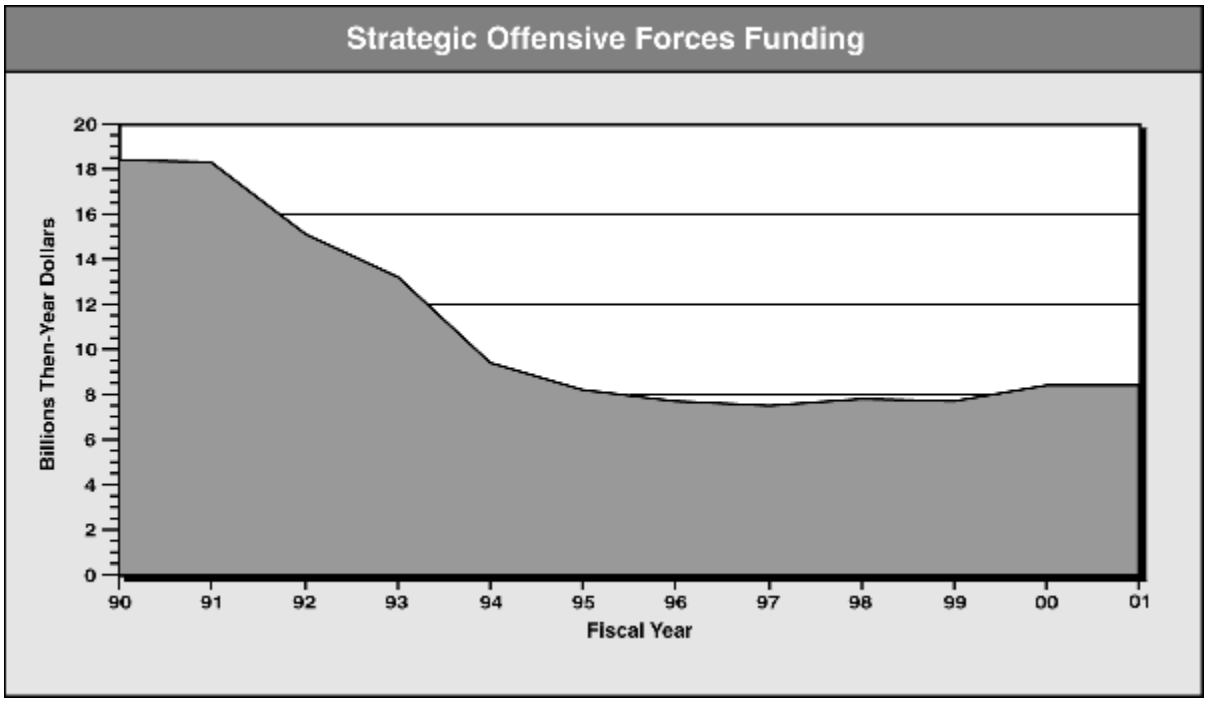
stage motors will go through their first depot refurbishment after having been deployed for more than 25 years. The motors for the second and third stages of the rockets, which have demonstrated only about a 17-year service life, will be refurbished for a second time. Installation of the refurbished motors will begin in FY 2000.

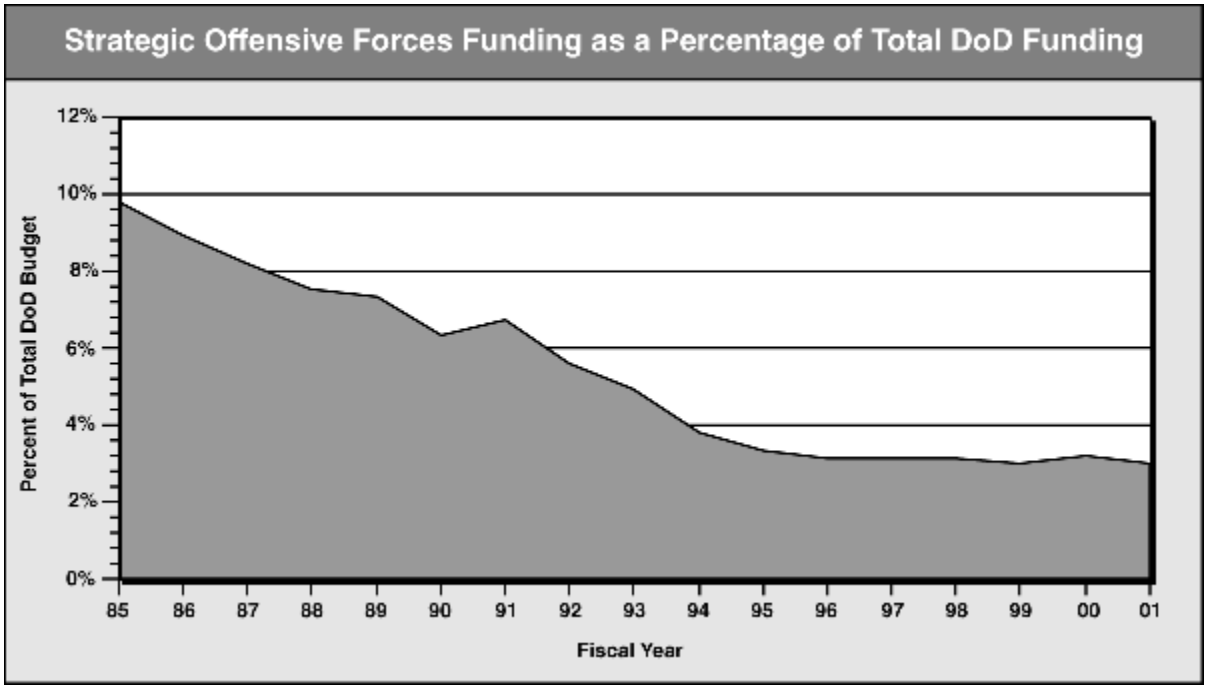
Reflecting the relaxation in Cold War tensions, the bomber force no longer is maintained on constant alert. This change in policy reduces stress on the aircraft and crews and allows a greater emphasis on conventional training. Although bombers are no longer kept on around-the-clock alert, they could be returned to alert status within a few days if circumstances warranted.

Whereas the bomber force is now at a lower state of alert than it was during the Cold War, there has been no change in the alert status of U.S. ICBMs and only a minor shift for SSBNs. A lower percentage of SSBNs at sea routinely patrol within range of potential targets and maintain continuous communications with command authorities. The United States still maintains two full crews for each SSBN, and about two-thirds of operational SSBNs are at sea at any given time. (On average, about 10 percent of the SSBN force is not operational at any given time because the ships are undergoing extended overhauls.) U.S. ICBMs are still on continuous alert, but no ICBMs or SLBMs are targeted against any country on a day-to-day basis. This change in targeting policy enhances strategic stability and reflects the new relationship between the United States and Russia, in addition to protecting against the remote possibility of an accidental launch. The missiles could, however, be returned to their previous targeting status on short notice.

FUNDING AND MODERNIZATION

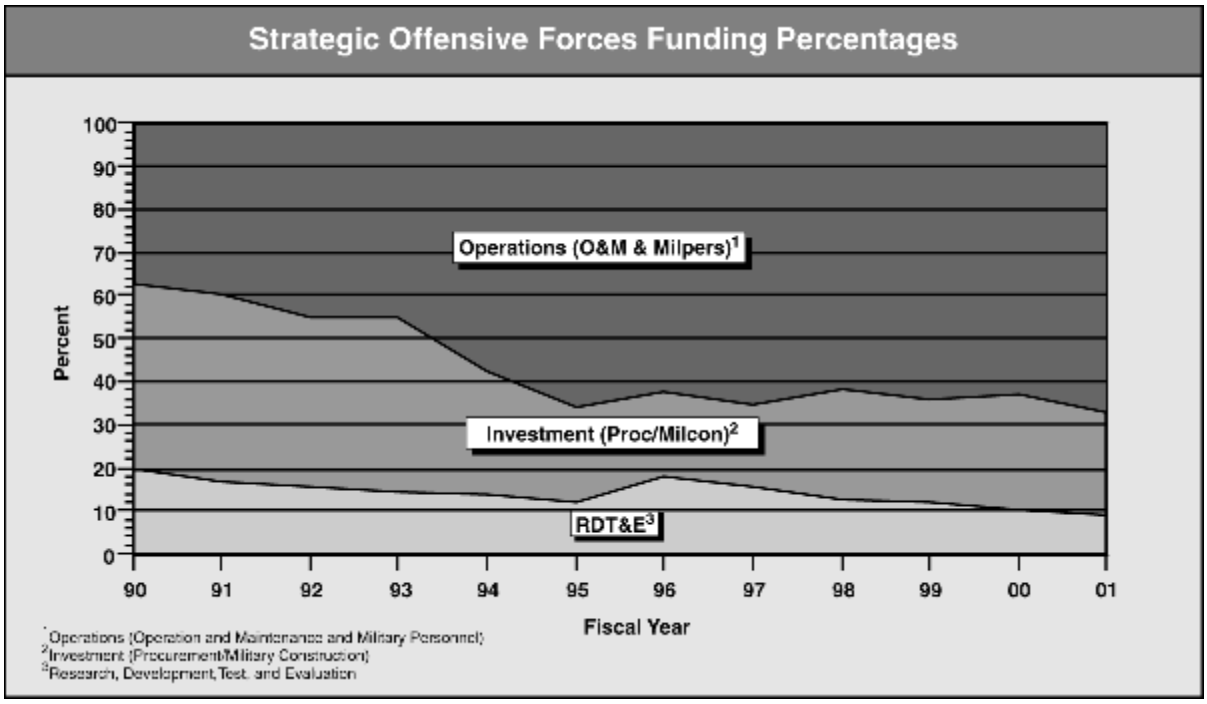
Reflecting the end of the Cold War, funding for strategic nuclear forces -- bombers, ICBMs, and SLBMs -- continues to fall and is now the lowest it has been in more than 30 years. This is true in terms of both total expenditures (adjusted for inflation) and the fraction of the total Department of Defense (DoD) budget that is devoted to nuclear force elements. Spending for strategic nuclear forces, as a percentage of the DoD budget, reached a 20-year high during the mid-1980s, when the Reagan Administration was implementing its strategic modernization program. In 1984, for example, strategic offensive nuclear programs accounted for 11 percent of the DoD budget, with funding for strategic defense and strategic command, control, and communications accounting for an additional 3 percent of expenditures. In 1995, by contrast, total strategic programs represent less than 5 percent of the DoD budget, and strategic offensive nuclear programs represent slightly more than 3 percent. Moreover, one of the weapon systems included in this category -- the B-1B -- is in the early stages of conversion to a conventional role. The following charts show recent and projected trends in funding for strategic offensive forces.





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 to the Block 30 standard, B-1B conventional mission upgrades, Trident II (D-5) missile procurement, and Minuteman III life extension. Moreover, much of this effort is aimed at increasing the utility of bombers in the conventional role, not at nuclear capabilities per se. As shown in the chart below, expenditures to sustain the readiness of the existing force now account for most strategic nuclear funding, having increased from about 40 percent of the total in 1991 to 66 percent today. As the force structure stabilizes and

modernization programs are concluded, operations funding will continue to dominate 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 reduced in the aftermath of the Cold War, and the percentage of the DoD budget devoted to strategic forces is declining, these forces will continue to provide a strong and credible deterrent to nuclear attack. Moreover, U.S. strategic forces will retain a capability to respond to any reversal of the trends that have led to reductions in the nuclear arsenals of the United States, Russia, and the other former Soviet republics.

LAND FORCES

INTRODUCTION

The Army and Marine Corps constitute the nation's land forces. Deployed on the ground and at sea, these forces provide unique and complementary capabilities for carrying out defense missions. The Army maintains forces for power projection, forcible entry, and sustained combat operations on land. The Marine Corps, as part of the nation's maritime forces, provides expeditionary forces to project combat power ashore in support of naval campaigns or in advance of Army and Air Force units. These diverse capabilities give military commanders a range of options for conducting ground operations.

The Army maintains heavy and light forces, as well as special operations forces, based in the United States, Korea, and Europe. 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 -- are tailored for forcible-entry operations and for operations on restricted terrain, such as mountains, jungles, and urban areas. Light and heavy forces can be employed independent of one another, or they can operate in tandem as part of a joint force, as was done during the Persian Gulf War. For major deployments, the Army can dispatch a U.S.-based contingency force of up to five divisions plus support elements anywhere in the world. Army forces stationed overseas provide an additional source of combat power for regional deployments. The capabilities of Army special operations forces are discussed in a separate chapter of this report.

The Marine Corps maintains forces designed for sea-based, self-sustained power projection and forcible entry ashore. Marine units are employed as part of Marine Air-Ground Task Forces (MAGTFs) consisting of ground and air combat, command, and support elements. Marine Expeditionary Units (MEUs) are forward deployed continuously in or near regions of vital U.S. interest. Embarked on amphibious ships patrolling outside the range of shore-based weapons, these forces provide a swift and effective means of responding to fast-breaking crises.

Operationally, land forces are assigned to a joint force commander, who employs them in close coordination with aviation and support forces. Land forces also can operate in conjunction with naval forces, as was the case in last year's Haitian deployment, when aircraft carriers sailed for Haiti with U.S.-based Army forces aboard. The uncertain demands of the post-Cold War world make this kind of flexibility key to the effective and efficient use of land forces.

MISSIONS

Land forces play a central role in the full range of military operations, from crisis response and limited interventions to armed combat. Through overseas presence and power projection, these forces help deter aggression and enhance regional stability. Should trouble strike, they are trained and equipped to seize and hold territory, against heavy opposition if necessary, and to sustain combat operations for as long as circumstances require.

Although U.S. land forces are necessarily structured and equipped for full-scale combat operations, they are also prepared to conduct a range of operations short of war. Such missions, which are becoming more prevalent in the post-Cold War era, include peace enforcement and peacekeeping, humanitarian assistance and disaster relief, evacuation of U.S. citizens from crisis regions, counterdrug operations, and assistance to law enforcement agencies during civil disturbances. For example, U.S. land forces are today playing a key role in ensuring that democracy will be restored to Haiti.

THREAT

Threats can be characterized in terms of forces and weapon systems.

Forces

U.S. forces could confront adversaries of vastly differing strengths and capabilities, depending on the location and nature of an operation.

- Major regional conflicts (MRCs). These 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 4,000 tanks, 3,000 to 5,000 armored fighting vehicles, and 2,000 to 3,000 artillery pieces.
- Peace operations and other smaller-scale operations. In these smaller contingencies, U.S. forces would primarily conduct peace enforcement or other intervention operations. Activities could include armored or mechanized infantry operations, but most likely would involve light infantry operations against paramilitary forces, militias, rogue militaries, or other irregular forces.

Weapon Systems

In general, threats encountered in MRCs would be standing armies of foreign powers, armed with mixes of old and modern weapon systems. Adversaries in smaller-scale operations would tend to employ older weapon systems. Many nations, including members of the North Atlantic Treaty Organization (NATO) and the former Warsaw Pact alliance, are selling weapons on the international market. Thus, U.S. forces must be prepared to face 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 reactive armor and T-80(U)s with integral reactive armor. Older attack helicopters that potential adversaries might employ include Soviet MI-8/17 HIPs and German BO-105s; newer systems include Soviet MI-24/25 Hinds and upgraded French SA-342 Gazelles.

New weapon technologies will add more advanced capabilities to threat forces. Possible examples include tank upgrades (e.g., day and night optics, active defense systems that redirect or destroy incoming projectiles), advanced antitank guided missiles capable of top attacks against tank turrets, tactical ballistic missiles, and large-caliber, longer-range artillery.

Irregular forces will be unable to match the combat power of heavy U.S. weaponry. However, the proliferation of modern light arms, if combined with a fighting style unconstrained by laws or ethical codes, would pose significant challenges with which U.S. forces might have to deal.

Although potential adversaries are acquiring modern weapons, they are still vulnerable. U.S. dominance in command, control, communications, and intelligence technologies enables U.S. land forces to seize the initiative in battle. This advantage, coupled with the superior training and logistical support that U.S. land forces receive, gives them a capability unmatched by any potential opponent.

FORCE STRUCTURE AND CAPABILITIES

The structure of Army and Marine forces reflects the diverse operations they might be called upon to perform. Major regional conflicts pose the most significant potential demands, and thus drive force requirements. Land forces would be heavily involved in all phases of an MRC. The specific roles they could play are illustrated below:

- Phase I -- Halting the Invasion. Selected Army forces and MAGTFs would move rapidly to help allied forces establish a viable defense, thereby minimizing the loss of critical facilities and territory. If necessary, forcible-entry operations would be conducted using sea-based, airborne, or air assault forces working singly or in concert. Selected heavy force elements also would

participate in this opening phase of an MRC. The primary tasks of these early-deploying forces would be to mount an initial defense in conjunction with naval and aviation forces, and secure ports and airfields for the arrival of follow-on forces.

- Phase II -- Force Buildup. As heavier ground elements arrived, emphasis would shift from halting the invasion to preparing for a counteroffensive. Amphibious, air assault, and mechanized forces would conduct ground attacks along a broad front and engage rear-area targets with missile and artillery fire, to ensure that the enemy could not regain the initiative on the ground.
- Phase III -- Counteroffensive. Once sufficient forces were available in the theater, a large-scale air-land counterattack would be launched. Land forces would have primary responsibility for engaging and defeating enemy ground formations. Major tasks would include breaching minefields and defensive barriers, maneuvering to destroy armored formations, dislodging and defeating dismounted infantry in defensive positions or on urban terrain, and destroying enemy artillery.
- Phase IV -- Ensuring Postwar Stability. Once the enemy had been defeated, some land forces would remain in the theater to enforce the peace. These forces could be called upon to help in repatriating prisoners of war, to occupy and administer enemy territory, or to assist local authorities in restoring essential human services.

These basic land force roles in major combat operations drive overall requirements for Army and Marine forces. Specific goals, derived in the Bottom-Up Review a year ago, call for the following forces to prosecute two nearly-simultaneous MRCs. Army combat forces would include 10 active component divisions, augmented by 15 enhanced-readiness Army National Guard (ARNG) combat brigades. The ARNG units will be maintained in a status that allows them to deploy within 90 days of mobilization. The Marine Corps would provide two to three Marine Expeditionary Forces (MEFs), augmented and reinforced by Marine Reserve forces.

The forces required for peace operations and smaller-scale operations normally are subsumed within those needed for MRCs. For example, the land force contingent for a substantial peace enforcement or intervention operation might include various combinations of the following: an Army airborne or air assault division, an Army light infantry division, an Army armored or mechanized infantry division, and a Marine Expeditionary Force (Forward).

Army Force Structure

The FY 1996 budget continues the Army's transition to the post-Cold War force structure mandated by the Bottom-Up Review. By the end of FY 1996, the Army will consist of four corps and 18 active and reserve component divisions, down from five corps and 28 divisions prior to the end of the Cold War. The active force will continue to be reduced, declining from 18 divisions and an end-strength of 732,000 in FY 1990 to 10 divisions and an end-strength of 495,000 in FY 1996.

Over the next two years, the Army will inactivate two army headquarters, called Continental U.S. Armies (CONUSAs), three combat brigades, and two divisional headquarters and their associated units. The remaining 10 active divisions will include one airborne, one air assault, two light infantry, and six heavy (armored and mechanized) divisions. All divisions will consist of three active component brigades. Some divisions will have one brigade stationed at a different location. The net result will be a reduction of approximately 10 percent relative to today's active force level of 540,000. The reductions and realignments will be accomplished as follows.

In FY 1995, the 194th Armored Brigade (Separate) at Fort Knox, Kentucky, and the 3rd Brigade of the 25th Infantry Division at Schofield Barracks, Hawaii, will be inactivated. The 1st Brigade, 7th Infantry Division (Light) at Fort Lewis, Washington, will be redesignated as the 3rd Brigade of the 25th Infantry Division. The 1st Brigade, 6th Infantry Division at Fort Richardson, Alaska, will be aligned with the 10th Mountain Division (Light Infantry), at Fort Drum, New York, serving as its third brigade.

Realignment of CONUSAs (the units that provide regional oversight for reserve training and mobilization) will also be completed in FY 1995. The 1st Army at Fort Meade, Maryland, and the 6th Army at The Presidio of San Francisco, California, will be inactivated. Oversight of reserve units will be consolidated under the two remaining CONUSA headquarters. The 2nd Army at Fort Gillem, Georgia, will control reserve units in an area extending from Minnesota to Louisiana and eastward. The 5th Army at Fort Sam Houston, Texas, will control reserve units in the western portion of the country.

In FY 1996, the headquarters and supporting units of the 1st Infantry Division (Mechanized) at Fort Riley, Kansas, and the 4th Infantry Division (Mechanized) at Fort Carson, Colorado, will be inactivated. One brigade at Fort Carson will also be inactivated. The brigade remaining at Fort Carson will fall under the command of the 2nd Armored Division at Fort Hood. The two brigades remaining at Fort Riley will serve as the third brigades of the two divisions stationed in Germany.

Adjustments in the Army reserve components -- the Army National Guard and the U.S. Army Reserve -- are being made consistent with the reduction in the active force structure. The National Guard has declined from 10 divisions in the early 1990s to eight divisions today; total end-strength in the Army reserve components will have declined from 736,000 in FY 1990 to 575,000 by FY 1998. Today, Army reserve component end-strength stands at 670,000.

The ARNG will continue to provide combat forces to augment the active force. In addition to the enhanced readiness brigades mentioned earlier, the ARNG will maintain strategic reserve combat forces consisting of eight divisions, two brigades, and one infantry scout group. These units will be maintained at readiness levels that allow them to mobilize in the event of an extended crisis or protracted operation. These forces also would provide an initial response in domestic emergencies. Like the enhanced readiness brigades, they could be activated and employed as a rotation force for peace operations.

ARNG and Army Reserve forces also will continue to perform combat support and combat service support functions that they have fulfilled so effectively and responsively in the past. More than 60 percent of the combat support and combat service support required by active Army forces will come from the reserve components. Reserve forces also will continue to play dominant roles in disaster relief operations in the United States.

Marine Corps Force Structure

The Marine Corps will maintain four divisions (three active and one reserve), three active aircraft wings and one reserve wing, and associated active and reserve combat support elements. The Marine Corps Reserve will continue to provide forces to augment, reinforce, or reconstitute the active component of the Marine Corps in time of war or national emergency. Active Marine Corps end-strength has declined from 194,040 in FY?1991 to 174,000 today; Marine Corps Reserve end-strength has dropped from 44,900 to 42,000 over the same period. Table VI-1 summarizes the planned FY 1998 force structure for the Army and Marine Corps.

Table VI-1

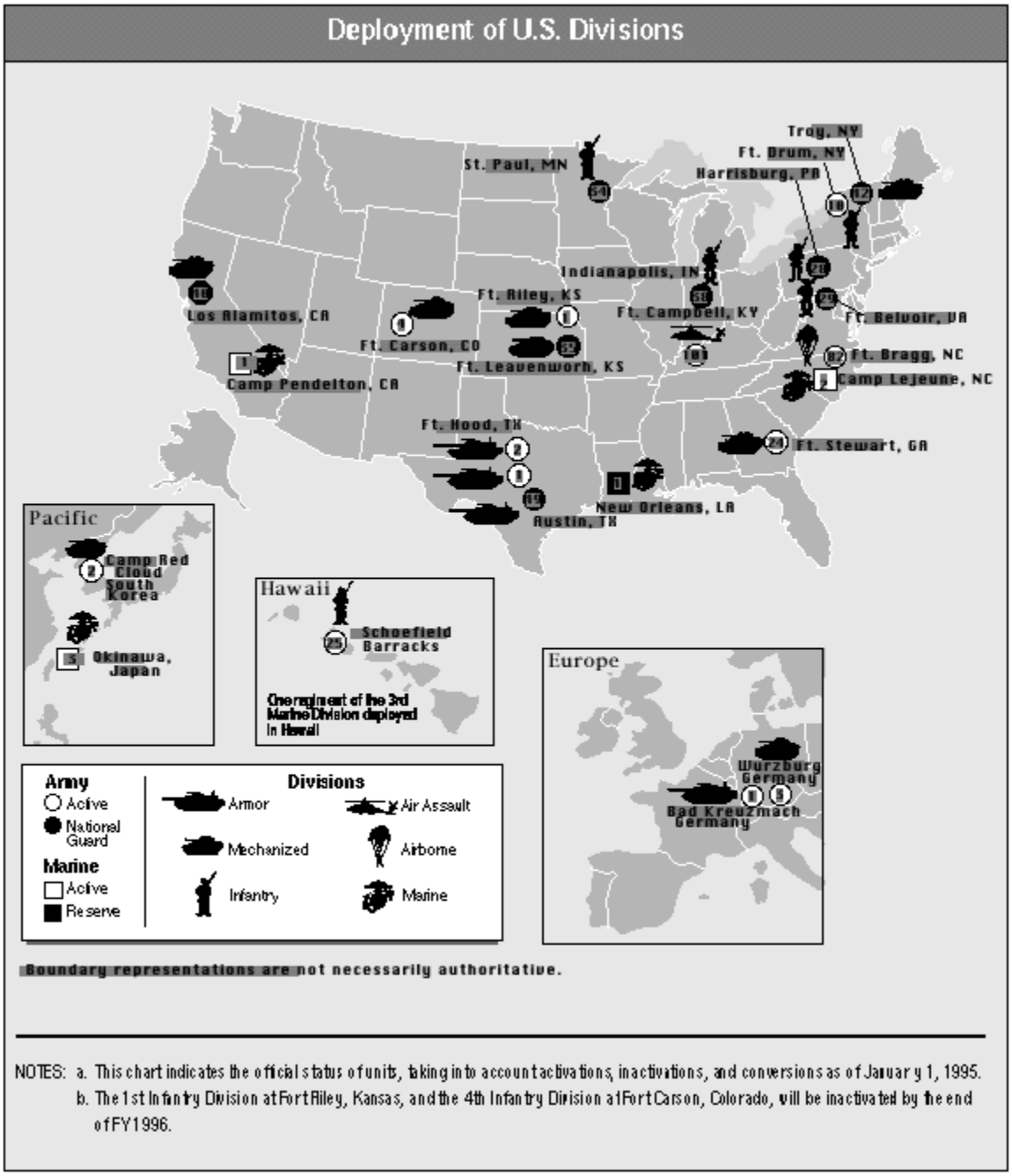
Army and Marine Corps
Force Structure and End-Strength

	Objective (FY 1998)
Army	
Active Component	
Divisions	10
Armored cavalry regiments	3
End-strength[a]	495,000
Army National Guard	
Divisions	8
Separate brigades and armored cavalry regiments	18[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	1
Wing	1
Force Service Support Group	1
End-strength[a]	42,000

[a] End-strength figures include all functional areas of combat, combat support, and combat service support.
[b] Fifteen will be enhanced brigades.

Stationing

The following chart shows the location of major Army and Marine Corps units as of January 1995.



The peacetime presence of U.S. forces overseas demonstrates the nation's commitment to the security of friends and allies and enhances U.S. crisis-response capabilities.

EUROPE AND ATLANTIC REGION

The United States remains committed to fulfilling a significant role in the North Atlantic Treaty Organization. A corps headquarters plus substantial elements of two Army divisions, including support elements -- with a total troop strength of 65,000 -- will be retained in Europe. Brigade sets of Army equipment will remain prepositioned on the continent. This materiel will allow in-place divisions to grow to full strength and additional forces to be deployed to the theater in the event of a conflict. A Marine Expeditionary Unit will be routinely deployed in the Mediterranean Sea, and a set of equipment sufficient

for a Marine Expeditionary Brigade will be maintained in Norway and on maritime prepositioning ships (MPS) in the Mediterranean Sea.

NORTHEAST ASIA AND PACIFIC REGION

The Army 2nd Infantry Division -- with two brigades plus other Eighth Army supporting elements and a total troop strength of nearly 26,000 -- will be maintained in South Korea to deter aggression from the north. The Army 25th Infantry Division (Light), stationed in Hawaii, and a brigade of the 10th Mountain Division, stationed in Alaska, are also oriented to the Pacific region. The 3rd Marine Division (one reinforced 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 set of equipment for a Marine Expeditionary Brigade will be maintained afloat on maritime prepositioning ships stationed in the vicinity of Guam.

SOUTHWEST ASIA

Two brigade 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 MPS squadron containing equipment for a Marine Expeditionary Brigade will be deployed in the region. In addition, one brigade set of Army equipment will be prepositioned afloat, for use in regional crisis-response operations.

READINESS AND SUSTAINABILITY

Maintaining ready, capable forces is the top priority of the defense program. The compensation and quality of life initiatives discussed in earlier sections of this report are key to attracting and retaining the high-quality personnel on which readiness depends. Training is another important contributor to readiness, and an area that will continue to receive close attention in the years ahead.

The Army and Marine Corps provide a wide range of training opportunities for their forces. These include joint and single-service programs in the United States and large multinational exercises conducted regularly abroad. The use of battle simulators at home bases and combat training centers (CTCs) allows Army and Marine forces to hone critical skills in advance of field exercises and operational deployments.

The National Training Center (NTC) at Fort Irwin, California, the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, and the Combat Maneuver Training Center (CMTC) at Hohenfels, Germany, use instrumented field exercises to improve the readiness of battalion- and brigade-sized units. The Army's goal is to train 12 brigades at the NTC each year and 10 brigades at the JRTC, while providing annual training opportunities at the CMTC for all of its European-based infantry and armor battalions. The Battle Command Training Program (BCTP) gives division and corps headquarters staffs specialized training in wartime command functions. This program combines seminars and battle simulations at Fort Leavenworth with computer-assisted command post exercises at home stations. Plans call for all active component division and corps staffs to receive BCTP training once every two years; all ARNG division and brigade staffs will train once every three years.

Marine Corps units conduct large-scale, live-fire and maneuver field exercises at the Marine Corps Air-Ground Combat Center (MCAGCC) at 29 Palms, California. Eight active-duty and two reserve infantry battalions are trained each year in MAGTF-level exercises. The Mountain Warfare Training Center (MWTC) in Bridgeport, California, prepares Marine units for both mountain and cold-weather operations. Marine expeditionary units also receive extensive training before each deployment at MCAGCC, MWTC, and land force training centers, located at Camp Lejeune, North Carolina, and Camp Pendleton, California. Finally, under the MAGTF Staff Training Program, senior commanders and staffs receive specialized training for employing MEFs in joint operations.

Army and Marine forces also participate in joint and combined training exercises both in the United States and abroad. Major exercises in FY 1994 included Bright Star 94 in Egypt, Cobra Gold 94 in Thailand, Native Fury in Kuwait, Ulchi Focus Lens 94 in Korea, and Fuertes Caminos in South America.

Land forces have been employed in numerous crisis-response operations in recent years. These deployments, coupled with routine overseas presence missions, have placed strains on the operations and maintenance accounts, which also fund training and sustainment programs. The Department is acutely aware of this problem and is working with Congress to find a method of funding contingencies that does not harm readiness. In the meantime, some Army and Marine Corps commanders are abbreviating field exercises, operating fewer vehicles, and using simulators to achieve savings in operating and maintenance accounts, while maintaining at an acceptable level the quality of training provided to their forces.

MODERNIZATION

Modernization programs for the Army and Marine Corps will preserve the combat edge that U.S. land forces now possess, while laying the technological groundwork for longer-term enhancements.

Army

U.S. warfighting strategy calls for winning conflicts rapidly with minimum casualties by denying the opponent the ability to maintain a coherent operational plan or to respond decisively to changing battlefield conditions. This concept requires both superior weaponry and a superior ability to concentrate the efforts of intelligence, logistics, fire support, and maneuver forces at the decisive time and place. To this end, Army modernization programs emphasize five interrelated areas where U.S. forces must maintain a decisive edge: battlefield intelligence and communications; precision strikes; battlefield maneuver; force protection; and force projection and sustainment. To achieve these objectives in a fiscally constrained environment, the Army is integrating selected capabilities (e.g., night-vision devices, information digitization) into the force through system upgrades, while pursuing only those new programs of highest priority.

In some instances, modernization programs have been restructured or slowed to free resources for readiness and quality of life initiatives. One example is the Comanche (RAH-66) armed reconnaissance helicopter program, which has been restructured as a technology demonstration effort. Under the revised plan, two flyable prototypes of the Comanche will be produced. The Army will rely on the Apache Longbow helicopter for the armed reconnaissance function into the next century.

ABRAMS TANK UPGRADE

The M1A2 upgrade program will improve the lethality, mobility, and survivability of approximately 1,000 older Abrams M1 tanks. Enhancements include a 120mm gun, suspension improvements, a nuclear-biological-chemical (NBC) protection system, and improved armor. Battlefield performance will be enhanced through the addition of a commander's independent thermal viewer, an independent commander's weapon station, position navigation equipment, and a digital data bus and radio interface unit that permit the rapid transfer of data between the Abrams and other systems on the battlefield. The M1A2 upgrade program began in FY 1993. Since then, 234 tank upgrades have been funded; another 547 are programmed during FY 1996-2001. The remaining conversions will be accomplished with funds requested beyond FY 2001.

BRADLEY FIGHTING VEHICLE UPGRADE

The A3 upgrade to the Bradley fighting vehicle system will complement the capabilities provided by the M1A2. Approximately 1,600 existing Bradley A2s will be remanufactured into A3s. In addition to providing digital communications capability, the A3 upgrade improves the lethality and survivability of the Bradley by adding an improved fire control system and a commander's independent thermal viewer. When equipped with upgraded Bradleys, mechanized infantry units will be able to share battlefield data

with M1A2-equipped armor units. Engineering and manufacturing development of the A2-A3 Bradley upgrade will continue through FY 1996. Low-rate initial production is scheduled for FY 1997.

APACHE LONGBOW AND LONGBOW HELLFIRE MISSILE

This modification to the Apache helicopter will provide ground commanders with a long-range aerial weapon system capable of delivering massed, rapid fire in day or night and in adverse weather. Longbow's digitized target acquisition system can automatically detect and classify targets. The target acquisition system uses a millimeter-wave radar to direct a fire-and-forget version of the Hellfire II missile. Initial operational tests and evaluation of the Longbow system will be conducted in January through March of 1995; a production decision is expected in October 1995.

BRILLIANT ANTI-ARMOR SUBMUNITION (BAT) AND SENSE AND DESTROY ARMOR (SADARM)

BAT and SADARM are fire-and-forget submunitions designed to destroy tanks and other armored targets. BAT submunitions will be carried deep into enemy territory by the Army Tactical Missile System (ATACMS). Once released, BAT will use infrared and acoustic sensors to autonomously locate and attack moving armored vehicles. BAT will begin contractor developmental testing in FY 1996 and start low-rate initial production in FY 1998. SADARM is delivered to its target by 155mm howitzers (two submunitions per projectile). It is designed to destroy lightly-armored vehicles, primarily self-propelled artillery. Once dispensed from its carrier, SADARM locates its target using dual-mode millimeter-wave and infrared sensors. SADARM began low-rate initial production in FY 1995 and is scheduled for initial operational testing and full-rate production in FY 1998.

JAVELIN

This new man-portable missile system will improve the antiarmor capability of dismounted Army and Marine forces. It will replace the Dragon antitank system in infantry, scout, and combat engineer units. The Javelin can destroy both conventional and reactive armor targets from frontal or top attack positions. The system will improve soldier protection in two ways. First, its fire-and-forget technology will allow gunners to launch their missiles and immediately take cover. Second, the Javelin can also be safely fired from enclosed positions. Javelin is currently in low-rate initial production; a decision on full-rate production will be made in 1997.

ADVANCED FIELD ARTILLERY SYSTEM (AFAS) AND FUTURE ARMORED RESUPPLY VEHICLE (FARV)

These new-generation indirect-fire cannon and artillery resupply systems will be used by heavy Army forces. They will provide a significant increase in accuracy, rate of fire, mobility, and survivability, restoring the Army's cannon artillery supremacy. Innovations incorporated in the systems include a liquid propellant cannon, automated ammunition handling, and advanced fire control capabilities. AFAS and FARV will be in research and development during the program years; procurement is scheduled to begin in FY 2005. The AFAS and FARV will replace, respectively, the M109A6 Paladin self-propelled howitzer and M992 field artillery ammunition supply vehicle in early-deploying divisions, freeing those systems for allocation to other artillery units.

ARMORED GUN SYSTEM (AGS)

This new lightly armored vehicle will provide early-entry forces with a rapidly deployable, direct-fire antiarmor capability. Designed for easy transport, the AGS can be driven on and off the cargo ramps of airlift aircraft and delivered directly to the battlefield via parachute sleds. The AGS will replace the aging M551A1 Sheridan armored gun system operated by light Army forces. A total of 216 of these vehicles are programmed for procurement during FY 1996-2001.

FAMILY OF MEDIUM TACTICAL VEHICLES (FMTV)

This new family of 2 1/2-ton and 5-ton trucks will be used by combat, combat support, and combat service support units to move troops, equipment, and supplies within operating theaters. The trucks will be produced in a variety of versions, all incorporating a common chassis. This will reduce production costs and save maintenance time and expenses. The current five-year procurement contract will end in FY 1996 after 7,319 trucks have been produced. A second five-year contract will be awarded in FY 1999.

Marine Corps

Marine Corps modernization requirements derive from the operational maneuver from the sea concept, which provides for assaults to be launched further offshore, with greater flexibility, speed, and combat power. Initiatives that emphasize amphibious and aerial assault capability; land, sea, and air mobility; mine countermeasures; and fire support capabilities are essential to this concept.

Table VI-2

Key Army and Marine Corps Modernization Programs

	Current Dollars (Millions)			
	FY1994 Actual	FY1995 Actual	FY1996 Budgeted	FY1997 Planned
Army RDT-E				
Abrams Upgrade	39.0	11.7	38.8	48.7
AFAS	121.7	150.8	130.5	174.3
AGS	81.9	53.1	46.8	22.9
Apache Longbow and Longbow Hellfire Missile	271.1	169.0	23.6	4.1
BAT	121.9	117.5	193.3	186.0
Bradley Upgrade	61.5	75.1	117.9	91.7
Comanche	365.2	488.6	199.1	298.6
FARV	23.9	21.6	71.1	93.5
FMTV	8.7	6.5	--	--
Javelin	47.2	34.3	--	--
SADARM	42.0	41.4	16.6	3.6
Army Procurement				
Abrams Upgrade	106.4	172.9	473.9	468.4
AGS	8.2	--	141.6	182.2
Apache Longbow	--	79.4	354.8	409.7
Bradley Upgrade	201.6	144.4	138.3	131.7
FMTV	29.0	386.0	39.7	--
Javelin	207.3	212.6	171.4	168.2
SADARM	--	24.8	24.3	62.4
Navy RDT&E for the Marine Corps				
AAAV	21.2	32.7	32.4	31.4
Lightweight 155mm Howitzer	--	6.4	10.8	11.5
SRAW/Predator	23.9	14.0	31.5	33.4
V-22	9.8	452.7	762.5	580.9
Aircraft Procurement, Navy				
V-22	--	--	48.0	640.8

V-22

This new tilt-rotor aircraft is designed to replace the Marine Corps' aging fleet of CH-46 and CH-53D helicopters. The V-22's combination of range, speed, and payload will enable Marine units to move assault forces and supplies faster from ship to shore and within the area of operations. This improvement in mobility also enhances the survivability of supporting naval forces. Ships embarking these aircraft will be able to remain further offshore, thereby decreasing their vulnerability to shore-based missiles, underwater mines, and detection by ground surveillance systems. The V-22 program is currently in engineering and manufacturing development. Low-rate production is planned to begin in 1997.

ADVANCED AMPHIBIOUS ASSAULT VEHICLE (AAAV)

This new amphibious assault vehicle is designed to replace the Marine Corps' aging AAAV-7s, which are now more than 20 years old. The AAAV will allow Marine assault forces to deploy from amphibious ships located over the horizon, move rapidly to the beach, and continue the attack inland in a seamless operation. It will also provide armor-protected transport and direct fire support to Marine infantry forces ashore. Currently, two contractors are working to define AAAV concepts. The program plan anticipates a single competitively-awarded demonstration and validation contract in late 1995; low-rate production is anticipated to begin in 2005.

LIGHTWEIGHT 155MM HOWITZER

This program is a cooperative venture with the Army to replace the aging 155mm M198 howitzer with a lighter, more effective weapon. A lighter howitzer will make ship-to-shore delivery of artillery easier and increase the responsiveness of artillery units to ground operations. Initial research and development funds for the system are requested in the FY 1996 budget.

SHORT-RANGE ASSAULT WEAPON (SRAW)/PREDATOR

SRAW/Predator is a lightweight assault missile designed to defeat modern main battle tanks at short range. It improves gunner survivability through fire-and-forget technology and the ability to fire from enclosed spaces. This joint Army-Marine Corps program is currently in research and development.

Additional modernization programs for the Marine Corps are discussed in the Maritime Forces section of this report.

CONCLUSION

FY 1996 marks a year of continued change for the Army and Marine Corps. Both services will take additional steps to streamline and adapt their forces to post-Cold War requirements. While giving first priority to readiness, the FY 1996 budget and associated six-year program make the selective enhancements needed to keep Army and Marine equipment and munitions inventories capable and modern. The force structure and modernization initiatives outlined in this chapter represent a balanced and prudent approach to meeting future needs.

MARITIME FORCES

INTRODUCTION

Maritime forces include Navy ships, aircraft, and shore support, as well as Marine Corps air and ground forces. These forces ensure the United States' use of the sea, including access to selected land areas through expeditionary amphibious operations. They provide peacetime overseas presence and prompt crisis-response capabilities, and can redeploy worldwide with unmatched independence from foreign basing and overflight limitations. Once committed to a conflict, these forces are capable of projecting significant firepower ashore.

The inherent characteristics of maritime forces -- flexibility, self-sustainability, and mobility -- are vital in the post-Cold War world, where crises may arise outside areas where long-established U.S. alliances and bases exist. These qualities have been exploited frequently over the past year in operations both overseas and close to American shores.

The FY 1996 budget and Future Years Defense Program (FYDP) will maintain these qualities through selective modernization programs for key elements of the force. Combat readiness will be preserved, and quality of life enhancements will be pursued using savings accrued from the deferral of lesser-priority development and procurement programs. The result will be a modern, highly versatile force, smaller than its Cold War-era predecessors but possessing the diverse capabilities needed to meet evolving challenges.

MISSIONS

The primary focus of maritime forces has shifted from global to regional threats. In this context, maritime forces perform the following missions:

- Deterrence -- deterring aggression against the United States, its forces, or U.S. friends and allies.
- 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.
- Littoral Operations -- massing U.S. and allied forces and moving them ashore to deter and, if necessary, overcome an aggressor.
- Strike Warfare -- projecting firepower from the sea against targets ashore.
- Sea Control Operations -- gaining adequate control of the seas to secure U.S. objectives in regional operations.
- Maritime Support of Land Forces -- deploying and sustaining U.S. combat forces overseas through prepositioning, strategic sealift and its protection, resupply operations, and other support.
- Surveillance -- using a wide array of sensors to monitor air, surface, and subsurface areas of interest to the United States.
- Space and Electronic Warfare/Intelligence -- denying an enemy the use of the electromagnetic spectrum while exploiting it for U.S. purposes.

To carry out these missions, maritime forces conduct antiair, antisubmarine, and antiship operations as well as a variety of land attack missions. Amphibious, airborne surveillance, mine warfare, and fleet support operations also are vital to ensuring control of the seas -- a requisite capability in the successful employment of naval forces.

Maritime forces operate under joint command as appropriate, and ships can offer particularly suitable facilities for command and control of joint operations early in a contingency. When employed in a joint operation, maritime forces both provide support for other force elements and receive support from them. As an example, carrier-based aircraft and cruise missile-equipped ships and submarines can join land-based aviation forces in attacking ground targets, as they were called on to do in the Persian Gulf War. Likewise, land-based forces can contribute significantly to maritime operations, an important example being the aerial-refueling support provided to carrier aircraft by Air Force tankers.

In 1994, the Navy and Marine Corps (both active and reserve elements) participated in operations around the world spanning the full range of naval missions. Maritime forces spearheaded Operation Uphold Democracy in Haiti; participated in U.N. and NATO operations in Bosnia; enforced U.N. sanctions against the Haitian military; supported U.N. resolutions against Iraq, including enforcement of the no-fly zones and maritime interdiction operations; delivered humanitarian aid to Somalia and provided security for relief workers there; supported the evacuation of American citizens from Rwanda; provided support for Haitian and Cuban refugee operations; and used naval patrols and surveillance assets to help counter drug trafficking in the southern approaches to the United States.

THREAT

Naval forces could face a variety of threats while employed in forward areas. Potential regional adversaries, although not as powerful as the former Soviet Union, could still pose strong challenges to forces operating close to the shore. Among the most worrisome threats are antiship cruise missiles, which are becoming increasingly available throughout the world. These sophisticated, relatively inexpensive weapons can be launched from the air, sea, or land. The short reaction times inherent in countering them, once airborne, pose a significant challenge to existing antiair systems. Advanced weapons produced in several countries are being deployed in the Persian Gulf region, for example, presenting new and challenging threats to surface vessels.

The proliferation of weapons of mass destruction and tactical ballistic missiles poses another serious threat to U.S. forces operating in littoral environments. The risk that these weapons would be employed in a regional conflict has increased substantially over the past two decades. Currently, more than 25 countries possess or are developing nuclear, chemical, or biological weapons, and more than 15 nations have ballistic missile delivery systems.

Naval mines also pose a significant threat in littoral environments. Potential adversaries can accomplish offensive and defensive mining not only by using inexpensive, primitive techniques, but also by exploiting new mine technologies that are resistant to current clearance measures. To counter this threat, U.S. forces would first attempt to avoid minefields by maneuvering around them. If evasion were impossible, or if undetected fields were encountered, U.S. forces would move promptly to clear passages so that seaborne operations could proceed.

Diesel-electric submarines constitute another undersea threat with which U.S. forces must be prepared to deal. These vessels, operated by numerous navies around the world, can be difficult to detect when patrolling in shallow water. Uncountered, they can disrupt shipping and shut down vital sea lanes in littoral areas.

U.S. military strategy assumes that potential regional aggressors will field a diverse range of capabilities with which U.S. maritime forces might have to deal. The FY 1996 budget and six-year program will ensure that the Navy and Marine Corps are equipped and trained to deal effectively with these threats.

FORCE STRUCTURE AND CAPABILITIES

During the Cold War, carrier battle groups and amphibious ready groups were the centerpieces of the maritime force structure. Carrier battle groups usually consisted of one aircraft carrier and about six cruisers or destroyers and one or two attack submarines, augmented by various support ships. Amphibious ready groups were composed of four to five assault landing ships and their embarked Marine components. Emphasis on these basic force elements continues in the post-Cold War period, although significant changes are being made in some of their components and in the ways they are employed in joint operations.

The flexibility of U.S. naval forces enables their capabilities to be tailored to match a wide range of contingencies. Forces of varying size and composition can be committed to an operation, depending on the nature and scale of response required. For operations not likely to involve high-intensity combat, a naval expeditionary task group (NETG) or an amphibious ready group with embarked Marines might be employed. Depending on the situation, an NETG could consist of amphibious ships plus a mix of surface combatants and submarines armed with long-range Tomahawk land-attack and antiship cruise missiles. For operations requiring a more robust response, a larger naval expeditionary task force could be deployed. Such a force would consist of one or more aircraft carriers with multimission air wings plus amphibious ships with an embarked Marine air-ground task force. In all cases, maritime forces will be capable of operating jointly with other forces, both U.S. and allied.

The maritime force structure supports the warfighting strategy called for by the Bottom-Up Review, which requires U.S. forces to be capable of fighting two major regional conflicts (MRCs) nearly simultaneously. Maritime forces often would provide the first response in an MRC. The equivalent of one carrier battle group and one amphibious ready group/Marine Expeditionary Unit are deployed on a continuous basis in the Western Pacific, Mediterranean, and Indian Ocean regions, or could be dispatched there in one or two weeks. These forces could undertake a range of operations in the initial phases of a conflict, from evacuating U.S. citizens to conducting aircraft and cruise missile strikes against surface and air targets.

To augment these deployments, additional maritime forces in a combat-ready condition could be ordered to a crisis region from U.S. waters within a matter of days. Once in the theater, these forces could help stabilize conditions ashore and provide secure afloat basing for command, control, and sustained combat as the U.S. buildup proceeded.

Ultimately, four to five carrier battle groups and one to two Marine Expeditionary Forces (MEFs) could be employed in a single MRC. For two nearly simultaneous conflicts, eight to 10 carrier battle groups and two to three MEFs could be required. These forces would prosecute the final phases of the campaign, supporting a counteroffensive and ensuring the prompt restoration of any friendly territory still in enemy hands.

Beyond warfighting requirements, maritime force needs are driven by forward presence goals in areas critical to U.S. interests. In some cases, sustaining planned levels of presence generates a larger total force requirement than does the two-MRC warfighting strategy. Accordingly, the FY 1996-2001 program provides sufficient maritime forces to prosecute two major regional conflicts and to meet peacetime requirements for overseas presence, while ensuring that an adequate rotation base is available to support Navy and Marine Corps goals for personnel operating tempo.

Force Structure

Twelve aircraft carriers and 12 large-deck amphibious ships constitute the core of the Navy's projected fleet, as shown in the following charts. Of these ships, one carrier will serve primarily as a reserve/training vessel and one amphibious ship will be designated as a reserve vessel.

One aircraft carrier and one amphibious assault ship were deactivated last year. Additional deactivations in 1994 included 18 cruisers, eight reserve frigates, 12 amphibious ships, and four attack submarines. Taking into account other planned ship retirements and future delivery schedules, the naval force in 1995 will consist of 373 ships (see Table VI-3).

Further adjustments, reflecting post-Cold War needs, will trim the force to about 330-346 vessels by FY 2001. The FY 1996 budget and associated FYDP support the following force structure goals:

- 11 aircraft carriers (active).
- 1 aircraft carrier (operational reserve/training).
- About 110-116 surface combatants (subject to further review, as noted below).
- 52 attack submarines by FY 2001 (about 45 as a longer-term goal).
- 43 amphibious ships providing lift capacity for Marine expeditionary forces.
- 27 mine countermeasure ships.
- 41 combat logistics force vessels and 21 support ships.
- 12 active and 8 reserve squadrons of P-3 aircraft.
- 8 reserve frigates.

Unforeseen deployments over the past year placed extremely heavy demands on some elements of the force. Guided-missile frigates provided the greatest relative share of added underway time in the surface combatant force. Because these ships are the least costly surface combatants to operate, and because they are multipurpose vessels, they are especially well-suited for operations such as those conducted last year in the Caribbean. Accordingly, the Navy is reconsidering its current plans to retire these ships before the end of their projected service lives.

Aircraft Carriers

		(Number of Years in Service)									
		92	93	94	95	96	97	98	99	00	01
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
Constellation	CV 64	30	31	32	33	34	35	36	37	38	39
Enterprise	CVN 65	RC	RC	RC	34	35	36	37	38	39	40
America	CV 66	27	28	29	30	(R)					
Kennedy	CV 67	24	25	26	27	28	29	30	31	32	33
Nimitz	CVN 68	17	18	19	20	21	22	RC	RC	RC	26
Eisenhower	CVN 69	14	15	16	17	18	19	20	21	22	RC
Vinson	CVN 70	10	11	12	13	14	15	16	17	18	19
Roosevelt	CVN 71	5	6	7	8	9	10	11	12	13	14
Lincoln	CVN 72	2	3	4	5	6	7	8	9	10	11
Washington	CVN 73	(C)	1	2	3	4	5	6	7	8	9
Stennis	CVN 74					(C)	1	2	3	4	5
Truman	CVN 75							(C)	1	2	3
Reagan	CVN 76				(P)						

(R) Retire (C) Commissioning (P) Procurement RC Refueling Complex Overhaul

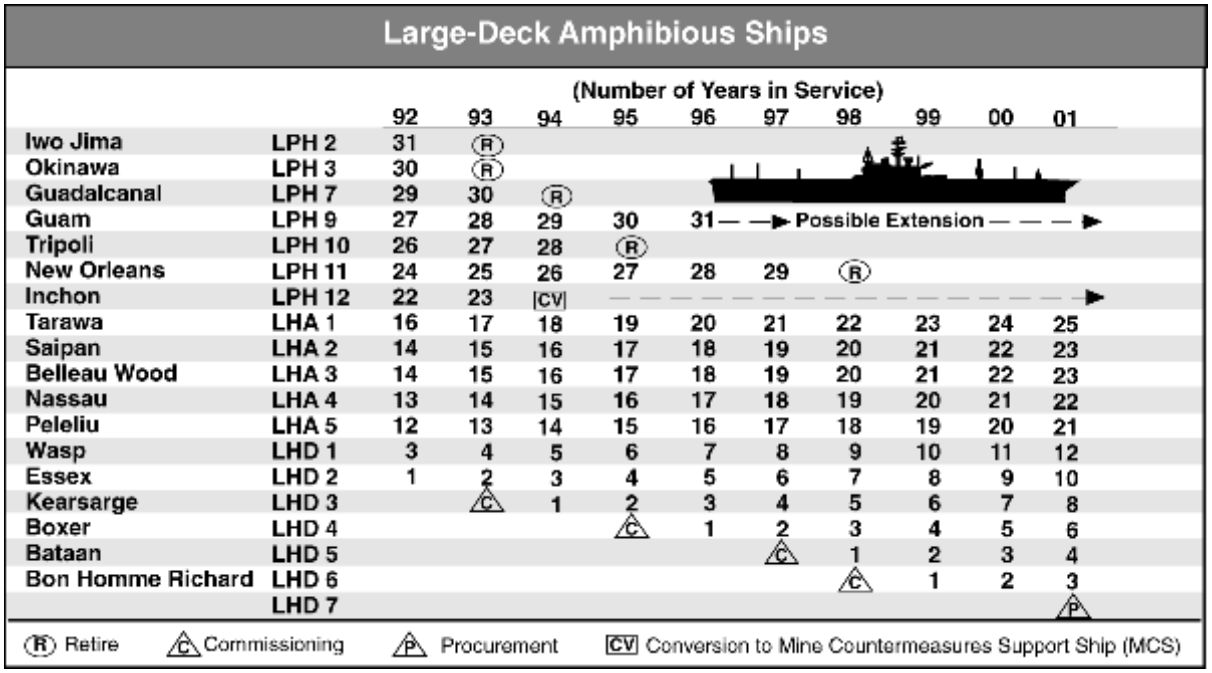


Table VI-3

1995 Force Levels

Strategic Submarines	16
Aircraft Carriers	12
Attack Submarines	84
Surface Combatants	113
Amphibious Ships	39
Mine Warfare Ships	15
Logistic Force Ships	78
Reserve Combatants	16
Total Ships	373

Capabilities

Maritime forces provide capabilities for a broad range of operations, from peacetime presence to crisis response to major conflicts. Operating independently or as part of a joint force, they perform command and control functions, maintain dominance over the battle area, and project combat power ashore in support of military campaigns.

COMMAND, CONTROL, AND SURVEILLANCE

Maritime forces possess extensive command, control, communication, computer, and intelligence (C^4I) capabilities that can be exploited from space, sea, or land. Onboard high-capacity, multimedia communications enable joint force commanders to receive information from centrally-managed national and joint support systems and from tactical surveillance systems such as maritime patrol aircraft, carrier-based aircraft, submarines, and surface combatants. Upgraded surveillance systems for naval forces permit near-real-time delivery of data in support of joint operations.

BATTLESPACE DOMINANCE

Control of the sea and the surrounding airspace is essential to effective maritime operations. Equally critical in littoral areas is the ability to deny an opposing force access to the sea. Aircraft carriers and surface combatants equipped with the Aegis air defense system would maintain air superiority and protect neighboring airspace in a regional conflict. Submarines, surface combatants, maritime patrol aircraft, and mine countermeasure forces also contribute to controlling the surface and undersea environments.

POWER PROJECTION ASHORE

Carrier-based aircraft and cruise missile-equipped surface ships and submarines provide firepower for quick retaliatory strikes ashore. Marine expeditionary forces, either embarked on amphibious ships or supported ashore from maritime prepositioning ships, extend the landward reach of littoral operations. Naval strike and expeditionary warfare forces can mass firepower and air/ground maneuver units to spearhead joint or multinational power projection operations as part of a larger sea-air-land team.

FORCE SUSTAINMENT

The ability to deploy and sustain maritime and other U.S. forces at great distances from American shores has become vital as the overseas base structure is reduced. A comprehensive logistic support system serves as the foundation for worldwide naval operations. It includes airlift and sealift forces, replenishment ships, mobile repair facilities, and advanced logistic support hubs. The Navy maintains about 40 combat logistics force ships to provide fuel, food, munitions, and other supplies to task forces at sea. Another 20 to 25 mobile logistics and support vessels can establish temporary support sites in forward areas. Complementing these forces are afloat prepositioning ships carrying equipment and supplies for U.S.-based forces that would deploy overseas in a crisis. These vessels, maintained continuously on station near potential trouble spots, are augmented in major deployments by sealift forces delivering additional combat and support material from the continental United States. Combat logistics support forces thus contribute not only to the sustainability of maritime forces; they support the deployment and operation of other U.S. forces in forward locations.

READINESS AND SUSTAINABILITY

One of the fundamental strengths of U.S. maritime forces is their ability to bring military power rapidly to bear in defense of U.S. interests worldwide. Navy and Marine forces on station in forward areas are trained and fully ready to operate either independently or as part of a joint force. To maintain readiness, peacetime forward deployments are designed to mirror wartime operating tempos as closely as possible.

This year, maritime forces will participate in more than 120 major unit exercises. More than half of these exercises will involve joint operations with other U.S. or allied forces. Exercises improve the readiness of maritime forces to support peacetime forward presence missions, they train U.S. forces to operate efficiently together, and they strengthen bilateral and multilateral security relationships with U.S. allies.

The number of flying hours and steaming days programmed for FY 1996-2001 is identical to the amount budgeted last year. In FY 1996, steaming days will be apportioned between the Atlantic and Pacific fleets as follows:

Table VI-4

Quarterly Steaming Days for FY 1996

	Nondeployed Fleet Units	Deployed Fleet Units
Atlantic	31[a]	50
Pacific	27	51

[a]The higher tempo relative to Pacific forces reflects longer transit time to training areas and Caribbean operations.

Contingency operations this past year have strained the Navy and Marine Corps' people, equipment, and budget. To offset the cost of unanticipated deployments, training and exercises often must be reduced. Prompt additional funding for contingency operations is needed in order to avoid adverse consequences for readiness and training. As discussed elsewhere in this report, the Department is working with the Congress to develop a method of managing and funding contingencies that does not jeopardize readiness.

Sustaining maritime forces in distant regions requires adequate onboard spare parts as well as material maintained elsewhere in the Navy supply system. The FY 1996 budget and FYDP recognize this fact, providing funds to procure the munitions, spare parts, and other supplies needed to achieve sustainability objectives for two nearly simultaneous major regional conflicts.

MODERNIZATION

To ensure a capable and ready force for the future, the Department of the Navy is pursuing a plan, initiated last year, for the selective modernization of the fleet. This plan embodies a concept known as recapitalization. Recapitalization aims to create an investment program in which sufficient new acquisitions are funded on a continuous basis to offset the capability lost through the disposal of older equipment. The initiatives planned for FY 1996 and subsequent years will maintain a robust, albeit smaller, maritime force structure while hedging against uncertainties in the threat. To maintain the capabilities needed for littoral operations, critical modernization programs outlined in the Bottom-Up Review are continued in this budget. Several lesser-priority programs have been curtailed or eliminated, however, relative to plans a year ago. These reductions, described in subsequent sections, represent a 10 percent decrease relative to last year's plan. They were undertaken in order to fund higher-priority readiness and personnel programs while remaining within overall fiscal limits.

Shipbuilding

Shipbuilding programs in the FY 1996 budget and FYDP will provide selective replacements for older ships, modernize the existing force, and preserve critical industrial capabilities. Table VI-5 portrays the FY 1996- 2001 shipbuilding program.

AIRCRAFT CARRIERS

Two more Nimitz-class carriers will be delivered by FY 1998, and the Navy's next carrier, USS Ronald Reagan (CVN-76), will enter service in FY 2003. These ships will replace older, conventionally-powered vessels, supporting a long-term force of 11 active carriers. An existing conventionally-powered carrier will serve as a reserve and training ship, which also will be available for limited deployments. Plans for

aircraft carrier construction beyond CVN-76 await the completion later this year of ongoing studies of alternative carrier concepts and related technologies.

AMPHIBIOUS SHIPS

Overall plans for the amphibious force structure have changed from a year ago. The unanticipated deployment of the USS Inchon (LPH-12) to Haiti led to a reevaluation of plans, resulting in a decision to maintain sufficient ships to support 12 amphibious ready groups. The retirement schedules of LPHs will be adjusted accordingly. The acquisition of a seventh LHD, programmed for procurement in FY 2001, will sustain a force of 12 large-deck amphibious assault ships well into the next century. Ships of the Wasp (LHD-1) class are large, multipurpose vessels designed to embark and deploy Marine ground forces using a combination of vertical short-takeoff and landing (V/STOL) aircraft, helicopters, landing craft, and amphibious vehicles.

Three additional LHDs and four LSD-49s -- a dock cargo landing ship for transporting and launching amphibious craft and vehicles -- will enter the force by the end of the decade. Procurement of the first LPD-17 amphibious transport dock (formerly designated LX) has been delayed two years, to FY 1998, because of budgetary constraints. Twelve ships of this class will be needed to sustain the goal of providing lift capacity for 2.5 Marine brigade-equivalents. Due to early retirements, one portion of lift capability -- vehicle space -- has dropped relative to desired levels. The delay in the LPD-17 program will slow the recovery of this element of lift capacity, although the retention of 11 older amphibious ships (LKAs and LSTs) in special reserve status will offset this loss somewhat. Nonetheless, the capability and flexibility of future amphibious forces will exceed today's levels.

Table VI-5

FY 1996-2001 Shipbuilding Program

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FYDP Total
New Construction							
Replacement Aircraft Carrier	0	0	0	0	0[a]	0[a]	0
SSN-21 (Attack Submarine)	1	0	0	0	0	0	1
NSSN (Attack Submarine)	0	0	1	0	1	0	2
DDG-51 (Guided-Missile Destroyer)	2	3	2	3	3	3	16
LHD-1 (Amphibious Assault Ship)	0	0	0	0	0	1	1
LPD-17 (Amphibious Transport Dock)	0	0	1	0	2	2	5
ADC(X) (Dry Cargo Ship)	0	0	0	0	1	0	1
T-AGS-60 (Oceanographic Research)	0	0	0	1	0	0	1
T-AGOS-23 (Ocean Surveillance Ship)	0	0	0	1	0	0	1
Conversions/Major Overhauls							
CVN-68 (Nimitz) Refueling Overhaul	0	0	1	0	0	0	1
Trident SSBN D-5 Conversion[b]	0	0	0	0	1	1	2

[a] About $630 million is programmed as a downpayment on a replacement carrier to be procured after FY 2001.
[b] Trident D-5 conversions are funded in accounts other than Shipbuilding and Conversion, Navy (SCN).

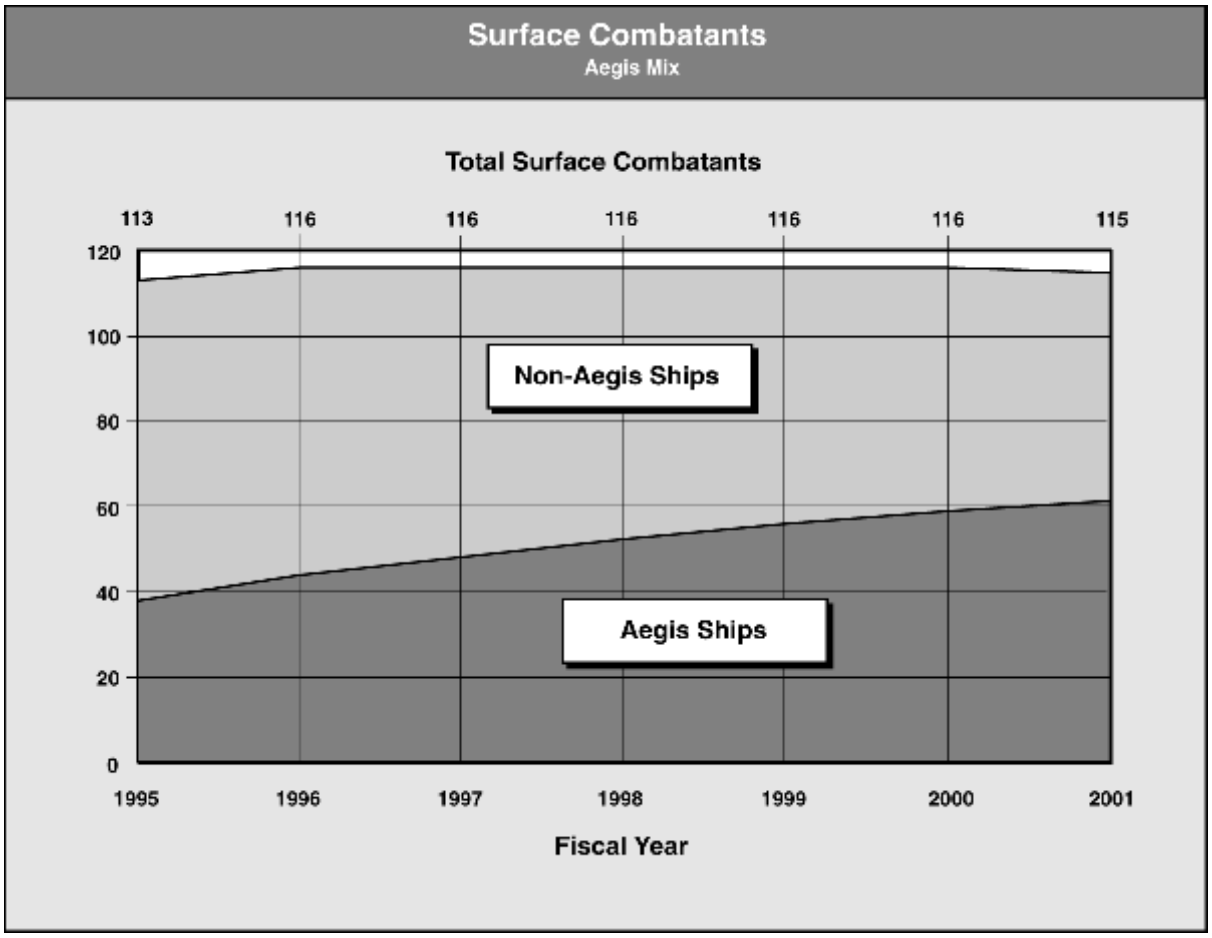
ATTACK SUBMARINES

The final SSN-688 Los Angeles-class submarine will be delivered in 1996. Two SSN-21-class (Seawolf) attack submarines are under construction, and the FY 1996 budget includes funds for the third, and final, boat of this class. The New Attack Submarine (NSSN), a lower-cost alternative to the Seawolf, has been

approved by the Defense Acquisition Board to proceed into the demonstration and validation phase of development. The NSSN will provide a replacement for 688-class submarines, which will begin retiring in large numbers in the next decade. It will incorporate technology improvements developed in the Seawolf program, along with capability enhancements for littoral operations. The FY 1996 budget includes advance funds for the first NSSN, which will be procured in FY 1998; a second ship is planned for FY 2000. This relatively low rate of production, with the third unit to be funded after FY 2001, is sufficient for the near term, given the reduction in the overall size of the attack submarine force. Procurement will have to be increased early in the next decade, however, to sustain a force of about 45 submarines over the longer term.

SURFACE COMBATANTS

With the delivery of the USS Port Royal (CG-73) in 1994, the 27-ship Aegis (Ticonderoga-class) cruiser program is now complete. Deliveries of Arleigh Burke (DDG-51) class guided-missile destroyers are continuing, with seven ships slated to enter service in 1995. The FY 1996-2001 program procures DDG-51s at a rate averaging just under three per year. This represents a net reduction of two ships relative to last year's plan. The adjustment was made in order to fund higher-priority initiatives.



At the end of 1994, the surface combatant force numbered 111 ships. The retention of two FFG-7-class frigates and two DD-963-class destroyers previously slated for retirement will increase the force to 116 ships in 1996. FFG-7 force structure needs beyond FY 1996 will be examined in future program and budget reviews.

The number of Aegis surface combatants in commission will increase from 39 in 1995 to about 59 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 system can identify, track, and simultaneously engage many more air targets than could earlier air defense systems. Research and development efforts will focus on providing Aegis-equipped ships with the ability to support theater ballistic missile defense operations, and on planning the next generation of surface combatants. The chart on the preceding page shows the changing mix of surface combatants in the force structure over the FYDP period.

MINE COUNTERMEASURE SHIPS

The Navy is replacing its aging minesweeper fleet with a new mine countermeasures (MCM) force. Last year's programs remain intact in the FY 1996 budget, reflecting the continued high priority accorded this warfare area. The force will include two new classes of ships, minesweeping helicopters, and several new sensor and combat systems. These additions will improve U.S. capabilities to detect both surface and underwater mines, while enhancing mine neutralization capabilities and improving navigation capability.

Two Avenger (MCM-1) class ships were delivered in 1994, completing this 14-ship program. Three more Osprey (MHC-51) class mine-hunters will enter service in 1995, building toward a total of 12 of these ships by 1998. Additionally, the USS Inchon (LPH-12) is being converted into an MCM command and control ship (designated MCS) to be operated by the Naval Reserve. The ship will be transferred to the reserve component in 1996.

COMBAT LOGISTICS FORCES

New AOE-6-class fast combat support ships will enhance the sustainability and flexibility of naval expeditionary forces. These high-speed multiproduct logistics ships will provide munitions, bulk petroleum, oil, lubricants, and dry and frozen provisions to battle forces at sea. The AOE-6 will replace aging AOE-1-class vessels, which will be retired beginning in the next decade. Four AOE-6s have been delivered or are under construction, and a fifth ship is planned for procurement in future years.

For the longer term, the Navy is evaluating designs for a new dry cargo ship, designated ADC(X). Ships of this class will replace combat logistics ships reaching the end of their service lives between 2006 and 2017. The ADC(X) will provide logistics support to seaborne task groups from forward bases ashore or specially-equipped merchant ships. It also will have a landing deck, making it capable of performing replenishment operations by helicopter. The lead ship is planned for procurement in FY 2000.

MAJOR FLEET SUPPORT SHIPS

The Navy is reducing its force of large tenders to four ships in the active fleet and two in a special reserve category. The remaining 11 tenders will be inactivated. The small residual force of active tenders hedges against a lack of overseas basing facilities in major conflicts. Retention of additional tenders in the inactive reserve fleet provides a longer-term hedge against unforeseen future developments.

THE SHIPBUILDING INDUSTRIAL BASE

The shipbuilding industrial base is one of the key supporting elements of U.S. maritime force modernization and preparedness. The ongoing reduction in maritime force levels clearly portends an additional contraction of the U.S. shipbuilding industry. The Bottom-Up Review concluded, however, that maintaining key elements of shipbuilding capability is in the long-term national interest. Maritime

forces, in particular, are tied to the industrial base for the production or conversion of militarily-unique items. Essential industrial capabilities must therefore be maintained for ships, submarines, and weapons.

The industrial base supporting new surface combatant construction currently 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 system integration capabilities. The procurement schedule for DDG-51s, discussed earlier in this section, will preserve design and construction capacity for advanced surface combatants while the industry downsizes to lower-rate production. The industrial base supporting construction of amphibious/auxiliary and sealift ships comprises three private shipyards: Ingalls Shipbuilding Inc.; Avondale Industries Inc., in Avondale, Louisiana; and National Steel and Shipbuilding Company, in San Diego, California. Projected capacity in this sector is sufficient to meet future shipbuilding requirements.

The design and construction of a nuclear-powered submarine involves some of the most difficult tasks performed by American industry. The associated technologies have been refined continuously since the 1950s, and are a vital resource that would be extremely difficult and costly to reconstitute if lost. The third Seawolf-class attack submarine, scheduled for construction at Groton, Connecticut, beginning in FY 1996, will preserve critical design, production, and supporting technologies until the New Attack Submarine enters production later in the decade. NSSN construction will, in turn, ensure the viability of General Dynamics' Electric Boat Division as a submarine builder into the next century.

Weapon Systems

TOMAHAWK

Tomahawk cruise missiles, carried by submarines and ships, allow seaborne forces to attack surface and land targets over distant ranges, in all types of weather. The Navy has taken steps in recent years both to increase the effectiveness of the Tomahawk system and to strengthen mission planning capabilities. Improvements in the latter area have resulted from the introduction in 1994 of the Tomahawk Afloat Planning System (APS), which allows forces at sea to plan or modify land-attack missions more rapidly. Other upgrades, being pursued as part of the Tomahawk Baseline Improvement Program (TBIP), will enhance the terminal guidance, precision strike, and hard-target penetration capabilities of the Tomahawk system.

STANDARD MISSILE

An upgraded version of the Standard surface- to-air missile (SM-2 Block IV) is entering production in FY 1995. In conjunction with the shipboard Aegis system, SM-2 Block IV missiles will provide naval forces with a comprehensive defense against attacks by ships, aircraft, and cruise missiles. Development continues on the next version of the Standard missile, the SM-2 Block IVA, designed to enhance fleet air defenses and provide a limited area (lower-tier) theater ballistic missile defense capability. Details on the Block IVA program are provided in the Ballistic Missile Defense section of this report.

SHIP SELF-DEFENSE SYSTEMS

The proliferation of antiship cruise missiles poses a continuing threat to surface forces. In response, the Navy is enhancing the self-defense capabilities of its warships. Two major initiatives are being pursued: the Cooperative Engagement Capability (CEC) and Ship Self-Defense (SSD) programs.

CEC consists of hardware and software improvements that will strengthen the air defense capabilities of naval task groups. Ships with these upgrades will be able to pass detailed target information to other ships within a task force in near real time. Early tests have demonstrated CEC's potential to make a major contribution to fleet defense. Ships will begin receiving these upgrades in FY 1996.

SSD comprises a series of programs designed to improve active and passive ship self-defense capabilities. The Close-In Weapons System (CIWS) is being upgraded to expand its engagement envelope. The Rolling Airframe Missile (RAM) -- a lightweight, low-cost surface-to-air missile -- is being added to destroyers and amphibious ships. An additional defensive layer will be provided by the Evolved Sea Sparrow missile (ESSM), scheduled for installation on several new ship classes starting in FY 1999. Other initiatives include enhancements in quick-reaction combat capability, radar signature reductions, improved integration of shipboard weapons, and the introduction of infrared sensors and an improved electronic warfare decoy system.

In parallel with these initiatives, improvements are being made in ship defenses against torpedo attacks. The FY 1996 budget continues procurement of the Surface Ship Torpedo Defense (SSTD) system, which will be installed on aircraft carriers and selected surface combatants and large-deck amphibious ships during routine maintenance periods.

Some modernization efforts have been slowed or canceled in order to fund higher-priority initiatives. RAM and SSD upgrades for FFG-7-class frigates have been deferred in view of the current plans for retiring these ships. Funding also has been reduced for radar upgrades, signature reduction efforts, and improvements in antisubmarine warfare (ASW) combat systems for some destroyers and cruisers.

SH-60 HELICOPTER

The Light Airborne Multipurpose System (LAMPS) combines the SH-60B helicopter with a computer-integrated shipboard system to extend the range and overall capabilities of surface combatants for antisubmarine and antisurface warfare, surface surveillance, and over-the-horizon targeting missions. To enhance littoral warfighting capabilities, the Flight IIA design of the DDG-51 will include the capability to support SH-60Bs. The last seven of these aircraft will be delivered in FY 1996.

The F version of the SH-60 is replacing the obsolete carrier-based SH-3H as naval battle groups' inner-zone ASW helicopter system. The SH-60F employs a new, longer-range active dipping sonar to localize and track submarines, particularly in littoral areas. Future plans call for the conversion and reconfiguration of both the SH-60 B and F classes into a common SH-60R model. The SH-60R program includes a service life extension as well as avionics upgrades, such as the addition of an advanced low-frequency sonar and multimode radar. The aircraft also will be outfitted with gun and missile systems, to enhance performance in littoral regions. The first conversions are programmed for FY 1999.

NAVAL SURFACE FIRE SUPPORT

With the return of its four battleships to inactive status, 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 role in this area, surface combatants also have important capabilities to contribute. Accordingly, the Navy is investigating gun, missile, and rocket technologies that could provide cost-effective 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, a shipboard 155mm gun using existing

precision-guided munitions, and a new attack missile system aboard ships. Acquisition decisions on specific programs await completion of ongoing analyses and tests.

THE WEAPONS INDUSTRIAL BASE

The ability to design and produce sophisticated weapons is protected in the FY 1996 budget through the acquisition of selected weapons, such as Tomahawk cruise missiles, at minimum sustaining rates from single producers. The cost penalty incurred through buying at less than economic rates is offset by the overall budgetary savings achieved. Maintaining warm production lines will preserve the design teams and technology base needed to increase production in future years.

Upgrades of existing systems also contribute to the maintenance of a technology base. Key programs in this area include torpedo enhancements, modernization of the Close-In Weapons System (CIWS), and improvements to air-delivered weapons, such as the Standoff Land Attack Missile (SLAM).

Surveillance and Communications

The FY 1996 budget includes funds for critical upgrades to naval C^4I systems, such as extremely high frequency (EHF) and superhigh frequency (SHF) satellite communication systems, the Joint Service Imagery Processing System (JSIPS), and the Joint Tactical Information Distribution System (JTIDS). These enhancements will strengthen command and control capabilities in joint operations and improve the ability of aircraft carriers to support a joint force air component commander.

The budget also expands unmanned aerial vehicle (UAV) capabilities, providing air-capable ships with an organic aerial-surveillance capability. In addition, funds are provided to upgrade the surveillance capabilities of the Navy's E-2C and EP-3 aircraft as well as the fleet of P-3C maritime patrol aircraft (MPA).

P-3C MARITIME PATROL AIRCRAFT

Land-based MPA squadrons provide surveillance support for naval task groups at sea. The responsiveness and utility of these forces in littoral environments has been demonstrated in numerous deployments in recent years.

The MPA force is being reduced to 12 active and eight reserve squadrons as part of the overall reduction in naval forces. With P-3C aircraft no longer in production, modernization is focused on life extensions and upgrades of existing aircraft. The Navy is extending the operational life of its P-3C force to about 40 years. A further extension to about 50 years is planned beyond the FYDP. Enhancements in surveillance capabilities are being made through the Antisurface Warfare Improvement Program (AIP). This initiative entails the application of commercial off-the-shelf technologies to improve MPA capabilities for surveillance, combat identification, and antiship missions. The AIP also includes communication upgrades and a new data link capability that will enable surveillance information to be transmitted in near real time. The FY 1996 budget and six-year plan provide funds to convert 46 of the newest P-3Cs to the AIP configuration. Ultimately, a total of 146 P-3C aircraft will receive these modifications.

Mine Countermeasures

The FY 1996 budget and associated FYDP provide funding for mine countermeasure enhancements called for in the 1994-1995 update to the Navy's Mine Warfare Plan. Both near- and long-term improvements are programmed. Specifically, mine countermeasure helicopters will receive modifications

to support night operations, while upgrades to C^4I systems will provide enhanced satellite communications links for MCM ships and improve MCM mission planning.

Table VI-6

Selected Modernization Programs

Current Dollars (Millions)

System	FY1994 Actual	FY1995 Actual	FY1996 Budgeted	FY1997 Planned
Tomahawk				
RDT&E Procurement	43.6	84.0	141.4	182.3
Procurement	257.5	240.6	161.7	152.1
Standard Missile				
RDT&E	62.3	16.8	8.6	2.0
Procurement	214.1	247.3	231.5	215.4
Cooperative Engagement Capability				
RDT&E	190.7	148.8	180.0	182.2
Procurement	--	--	--	--
Evolved Sea Sparrow Missile				
RDT&E	27.7	48.9	65.4	60.0
Procurement	--	--	--	17.0
Rolling Airframe Missile				
RDT&E	9.0	18.2	26.1	24.5
Procurement	53.3	63.1	69.2	71.3
SH-60R Helicopter				
RDT&E	44.5	40.9	47.5	38.0
Procurement	--	--	--	--
P-3C AIP Program				
RDT&E	--	--	--	--
Procurement	58.4	--	99.6	83.4

FREEDOM OF NAVIGATION

Freedom of navigation for U.S. maritime forces is discussed in Appendix I.

CONCLUSION

The FY 1996 budget carries forward the force structure and modernization initiatives undertaken as a result of the Bottom-Up Review. While some modernization programs have been curtailed to fund higherpriority readiness and personnel measures, the overall thrust of the budget and six-year plan supports the force goals and strategy objectives established in the Bottom-Up Review. The initiatives outlined in this chapter will ensure that U.S. maritime forces are organized, trained, and equipped to meet the challenges of the 21st century.

AVIATION FORCES

INTRODUCTION

Aviation forces are composed of fighter, bomber, and attack aircraft as well as specialized aircraft. The specialized systems perform a broad range of functions, such as aerial refueling, airborne warning and control, electronic combat and air defense suppression, and reconnaissance and surveillance for targeting. Helicopters and airlift aircraft also are part of the aviation force structure; these systems are addressed in the sections on land, maritime, and mobility forces.

Aviation forces can respond rapidly to threats from the air, land, or sea. Their diversity and flexibility reflect, in part, the differing roles and missions of the Services that provide them -- land-based forces from the Air Force, carrier-based forces from the Navy, and expeditionary land-and sea-based forces from the Marine Corps. The global reach and quick deployability of these forces make them particularly important in the post-Cold War era, as was demonstrated again last fall in the response to the Iraqi force buildup near Kuwait. Aviation forces also continue to play a key role in peacetime presence missions.

Reflecting these complementary capabilities, the following broad goals have been established to guide aviation force planning:

- Aviation forces will continue to be sized to meet the requirements of two nearly simultaneous major regional conflicts (MRCs) as well as to carry out overseas presence missions.
- High readiness is key to keeping forces prepared for prompt employment. Aviation forces will be based overseas where appropriate to provide an immediate combat capability.

Based on these priorities, plus threat and affordability considerations, the Department will continue to maintain:

- Twenty Air Force general purpose fighter wing equivalents (13 active, seven reserve component).
- Up to 182 long-range Air Force bombers.
- Eleven naval carrier air wings (10 active and one reserve).
- Four Marine air wings (three active and one reserve).

Acquisition programs supporting these objectives include fielding, by FY 2000, 20 B-2 bombers with improved conventional attack capabilities and development of the Air Force F-22 fighter and Navy/Marine Corps F/A-18 E/F fighter/attack aircraft. For the longer term, efforts will focus on defining the family of aircraft that will evolve from the Joint Advanced Strike Technology (JAST) program.

MISSIONS

Aviation forces perform the following missions:

- Air Superiority -- protect the United States, its forces, and its allies from air attack; attack and suppress enemy air forces and air defenses; gain and maintain control of the skies, allowing friendly ground, naval, and air operations to proceed; contribute to theater air defenses.
- Strike Warfare -- conduct air attacks against 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 for land forces and maritime operations.

- Surveillance and Reconnaissance -- use a wide variety of sensors to monitor air and surface areas of interest to the United States; acquire, process, and disseminate targeting information for delivery of weapons by airborne, land, and maritime forces.
- Deterrence -- prevent aggression against the United States and its allies by providing a ready and flexible means of responding to threats against vital interests.
- Operations Other than War -- support counterdrug, insurgence and counterinsurgency, counterterrorism, peacekeeping and peace enforcement, humanitarian assistance, and disaster relief operations.

To carry out these tasks, aviation forces conduct counter-air, close air support, interdiction, strategic attack, and associated specialized operations, working in close coordination with ground and naval forces. The Joint Force Commander (JFC) will normally designate a Joint Force Air Component Commander (JFACC) to provide centralized direction and control of the various aircraft employed in an air operation. The JFACC is the critical link between the air assets available in a theater and their integration into a joint force capable of accomplishing the missions the JFC requires.

Aviation forces carried out a variety of combat and noncombat operations during 1994. These included enforcement of the no-fly zones in Iraq and Bosnia; surveillance and logistics support for operations in Somalia, Haiti, and Rwanda; strikes on Serb forces violating the U.N. accords in Bosnia; and intercepts of aircraft suspected to be making illegal drug deliveries to the United States.

THREAT

Aviation forces must be capable of countering a broad range of threats. Intelligence estimates project future 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:

- Advanced airborne electronic equipment and weapons that currently are being marketed widely. New radar, electronic countermeasures, weapons, and other equipment can be fitted to existing aircraft at much lower cost than buying new aircraft. Provision of highly capable weapons, such as the Russian-made AA-11 short-range missile and the French-made Mica medium-range missile, could increase comparatively easily the capability of air forces that otherwise lack effectiveness against existing U.S. aircraft.
- Fighter aircraft, under development by several nations, that could challenge the capabilities of current U.S. weapon systems. One example is the French Rafale, a single-seat fighter that combines good maneuverability with a reduced radar cross section and infrared signature. This aircraft is planned to achieve initial operational capability in 1999 in the French navy; a land-based variant, expected to be an export candidate early in the next century, could be available to potential adversaries.
- Dense and highly capable integrated air defenses, resulting from the export of modern surface-to-air missile systems. These systems have advanced electronic features that are difficult to counter and could pose a serious challenge to quick and successful prosecution of an air campaign.

FORCE STRUCTURE AND CAPABILITIES

Force Structure

The end of the Cold War has permitted a major restructuring of U.S. aviation forces. The goal is to build leaner, more flexible forces capable of countering emerging threats and sustaining a credible forward presence.

The Air Force will have a total of 21.3 fighter wing equivalents (FWEs) at the end of FY 1995. The term fighter wing denotes an organizational unit that may be made up of varying numbers of fighter aircraft, depending on the unit's mission. A fighter wing equivalent, on the other hand, is a metric denoting 72 combat-coded fighter aircraft. During FY 1996, the Air Force will make an additional net reduction of 1.3 wings to reach the goal of 20 FWEs by the end of 1996. The resulting force will include the mix of aircraft shown in Table VI-7.

Table VI-7

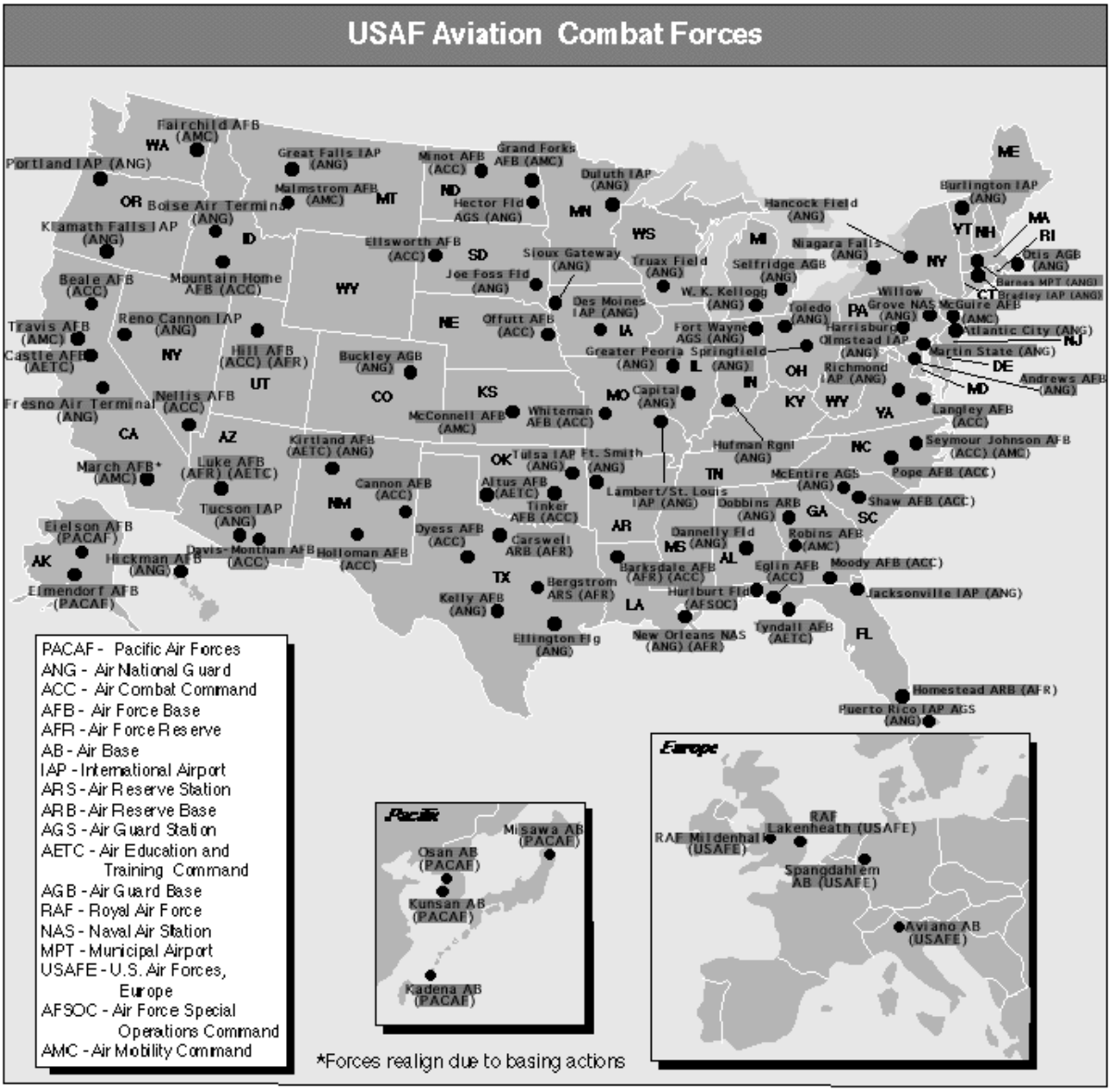
Composition of Air Force Wings -- End FY 1997 (Fighter Wing Equivalents -- FWEs)

AircraftType	Mission	TotalFWEs	ActiveFWEs	ReserveFWEs
F-15A/B/C/D	Air superiority	4.1	3.5	0.6
F-15E	Long-range attack	1.9	1.9	0
F-16C/D	Multirole[a]	11.3	6.1	5.2
F-117	Attack	0.5	0.5	0
A-10	Close air support	2.2	1.0	1.2
	Total	20.0	13.0	7.0

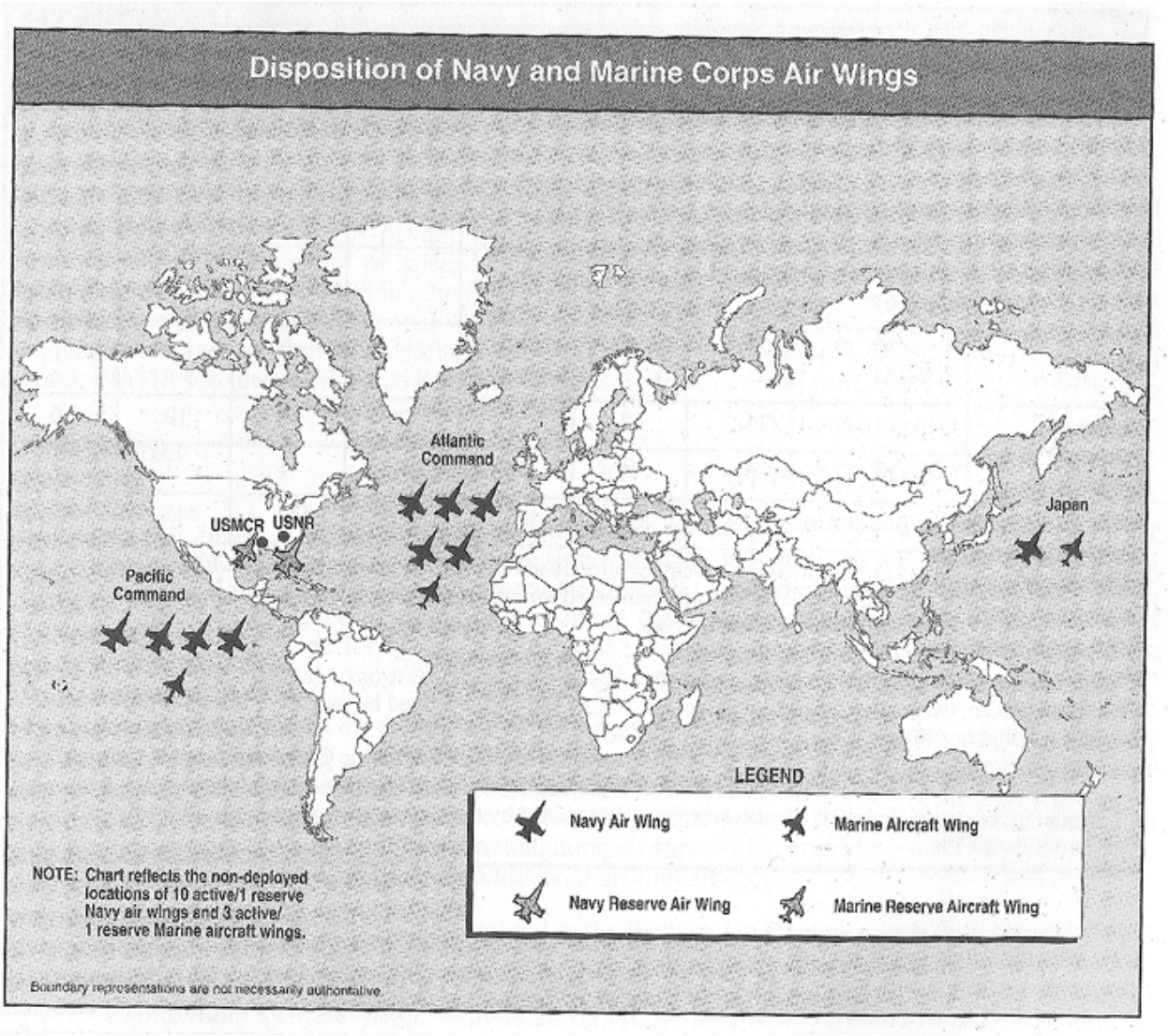
[a] Capable of both air-to-air and air-to-ground operations.

This structure emphasizes air-to-ground missions because regional contingencies are expected to present a much reduced air-superiority threat in the near- to mid-term than existed during the Cold War. The bulk of the Air Force's fighter aircraft (F-15Es and F-16s) will maintain a good air-to-air capability, however, permitting forces to be allocated as needed.

The Air Force will retire both the F-4G Wild Weasel and F-111 in 1996. With the F-111's retirement, F-15Es will take over all long-range fighter/attack missions. B-1B, B-2, and B-52 bombers will supplement the F-15E in this role once they receive precision munition upgrades. Some F-16s are being modified to assume the F-4G's role of locating and destroying enemy air defense missile sites. Most F-16A/B models will be retired, including specially-modified versions operated by air defense squadrons in the continental United States. A total of six squadrons, flying either F-16C/D or F-15A/B aircraft, will support the air defense mission.



Naval aviation also is being restructured. Consistent with the force goals established during the Bottom-Up Review, the Navy will retire two active and one reserve carrier air wing (CVW), leaving 10 active wings and one reserve wing. A-6 attack aircraft are being retired, with the last of these planes scheduled to leave the force in FY 1997. With the A-6's retirement, the Navy will deploy two types of fighter/attack aircraft aboard its carriers: F/A-18s and F-14s. A modest air-to-ground upgrade is being provided for some F-14s to give them the capability to employ the Joint Direct Attack Munition (JDAM) from medium to high altitudes; aircraft with this feature will be available beginning in 1998. With this upgrade, both the F-14 and the F/A-18 will be multimission systems, increasing force flexibility.



The structure of the basic carrier air wing will evolve throughout the 1990s as A-6s are phased out of the force in favor of a mix of F/A-18s and modified older F-14 fighters (see Table VI-8). The number of fighter/attack aircraft in each wing will decline to 50 from the current level of about 60. The smaller wings will be more flexible, however, because they will operate a greater percentage of multirole aircraft. To provide additional combat power for major deployments, the Navy is exploring the possibility of augmenting carriers having fewer than 60 planes with aircraft deploying from the United States. Over the longer term, an entirely new naval multirole aircraft could be developed using the technology base that results from the JAST program.

Table VI-8

Composition of Carrier Air Wings

Air Wing Type	Aircraft Type Type(PAI per CVW)	Number of Air Wings FY 1994	FY 1995	FY 1996	FY 1997	FY1998	FY 1999
Transitional	F-14 (20), F/A-18 (20), A-6 (16)	4	--	--	--	--	--
Power Projection	F-14 (20), F/A-18 (24), A-6 (16)	5	6	3	--	--	--
Littoral	F-14 (14), F/A-18 (36)	2	4	7	10	10	10
Reserve	F-14 (14), F/A-18 (36)	1[a]	1[b]	1	1	1	1
Total Navy Combat Aircraft (PAI)[c]		704	566	496	442	442	442

NOTE: PAI = primary aircraft inventory. Denotes aircraft authorized to combat units for performance of their basic missions; excludes aircraft maintained for other purposes, such as training, testing, attrition replacements, and reconstitution reserves.

[a] The reserve air wing in 1994 consisted of 20 F-14s, 24 F/A-18s, and 16 A-6s.
[b] From 1995 on, the reserve air wing will include 36 PAI F/A-18s, operated by two Navy Reserve squadrons(24 PAI) and one Marine Reserve squadron (12 PAI).
[c] Total PAI shown consists only of Navy F-14s, F/A-18s, and A-6s. The Marine Corps will provide sufficient active F/A-18 squadrons to ensure 36 PAI F/A-18s per deployed carrier air wing (actual numbers based on operating tempo requirements of each service as determined by the Department of the Navy Tactical Aircraft Consolidation Plan).

The Marine Corps will maintain four air wings -- three active and one reserve -- throughout the program period. Marine wings will be equipped as shown in Table VI-9. 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 fighter, and also as a reconnaissance and tactical air control system for operations at night and in adverse weather. The AV-8B, while capable of multiple missions, is used primarily in the close air support role.

Table VI-9

Composition of Marine Air Wings -- End FY 1997 (Fixed-Wing Combat Aircraft -- PAI and Squadrons)

Aircraft Type	Mission	Active PAI (Squadrons)	Reserve PAI (Squadrons)	Total PAI (Squadrons)
F/A-18 A/C	Multirole	120 (10)	48 (4)	168 (14)
F/A-18D	Multirole	72 (6)	0	72 (6)
AV-8B	Close air support	140 (7)	0	140 (7)
Total				380 (27)

Emerging needs and efficiency considerations have led to a new approach to managing Navy and Marine Corps F/A-18 and EA-6B deployments. In effect, these aircraft will form a common pool for satisfying requirements of specific deployments. This approach increases flexibility for assigning either Navy or Marine squadrons to any naval mission and ensures that neither Service will experience excessive personnel deployments. Four Marine F/A-18 squadrons and one EA-6B squadron will deploy aboard aircraft carriers over the next three years to support Navy operations; Navy F/A-18 squadrons will also deploy as necessary to support Marine operations.

Capabilities

The ease and speed with which aviation forces can be deployed worldwide underscore their importance in the post-Cold War era. These forces would likely provide the United States' initial response in an MRC, and they would contribute to each successive phase of combat operations. Emphasis initially would go to stopping or slowing the advance of enemy ground forces toward friendly territory. Air superiority would be established to enable priority air-to-ground operations to proceed effectively and to protect U.S. and allied forces.

The subsequent buildup of air forces in the theater could be directed to a variety of purposes, one of the most important being prosecution of an air campaign to destroy enemy logistics and command structures and military potential. Once sufficient forces were available to mount a counterattack, air operations would support the advance of friendly ground forces. After victory was achieved on the ground, air operations would focus on sustaining air superiority, providing surveillance of enemy operations, and if required, supporting additional ground attacks.

Overall aviation force structure goals, derived in the Bottom-Up Review a year ago, are as follows:

- About 10 Air Force FWEs, augmented by long-range bomber aircraft, would be needed to prosecute a single MRC. This force building block leads to a total objective of 20 FWEs, plus bomber aircraft, for two nearly simultaneous MRCs.
- Four to five carrier air wings plus the aviation elements of one to two Marine expeditionary forces, or MEFs (four to five brigade-equivalents) would be needed for a single MRC. Because of peacetime presence requirements and the geographical mobility of amphibious forces, however, 11 carrier air wings and three MEFs (seven brigade-equivalents) have been judged sufficient for two nearly simultaneous conflicts.
- Forces for lesser contingencies would be drawn from this basic structure. In these smaller operations, service aviation elements could be employed jointly or alone.

A principal concern in conducting ground attack operations in the initial phases of an MRC is maximizing the limited effectiveness of some existing munitions at night and in adverse weather, while minimizing aircraft attrition. One solution is to suppress medium-altitude surface-to-air missiles and hostile fighters, thus allowing friendly aircraft to operate above the more numerous and difficult to detect lower-altitude antiaircraft threats. This concept is radically different from the tactics that were planned for the early phases of a NATO/Warsaw Pact war, where most NATO attack aircraft entering enemy airspace would have traveled virtually at tree-top level to avoid Warsaw Pact fighters and the extensive network of radar-guided surface-to-air missile systems. One complication of medium-altitude operations, however, is the capability of aircraft to locate targets accurately. Free-falling weapons released from medium altitude tend to have limited effectiveness. Moreover, neither free-fall nor current precision weapons can be guided to their targets in adverse weather. To close this gap, a variety of more effective weapons -- such as the Joint Standoff Weapon (JSOW), Joint Direct Attack Munition (JDAM), and Wind-Corrected Munitions Dispenser (WCMD) -- are being developed. The guidance systems used in these munitions will provide accuracies not heretofore possible in operations around the clock and from standoff ranges.

In order to provide an accelerated capability with these weapons, the Department made a number of decisions that are reflected in this year's budget. These include procuring an additional 150 JDAM weapons in the engineering and manufacturing development (EMD) configuration, which will provide added capability for the B-2 and an early capability for the F/A-18; procuring 200 WCMD EMD kits for the B-52 and/or F-16; and beginning EMD for the JSOW unitary variant in FY 1995, which will make that weapon operational in FY 2001, three years earlier than previously planned.

The advent of low-observable, or stealth, aircraft has had a significant influence on the nature of air combat. Inherent in stealth technology is a degree of offensive air superiority that is important in enhancing the effectiveness of numerically limited aviation forces. Selective employment of low-observable Air Force F-117 attack aircraft during the Gulf War achieved notable success given the relatively small number of such aircraft deployed. In the near term, low-observable aircraft will constitute a small portion of the force, numbering nine B-2As and 36 F-117As at the end of FY 1996.

The demise of the Soviet Union has made it possible to slow the pace (and total cost) of the technological evolution of aviation forces, procuring fewer types and quantities of low-observable aircraft than was planned a decade ago. For the foreseeable future, therefore, air operations will be conducted by a mix of forces, some stealthy and some much less so, each being applied to it best advantage.

The proportion of aircraft incorporating significant signature reduction is expected to grow during the next decade as the Air Force F-22 fighter and the family of aircraft emerging from the JAST program reach the field. Their reduced signatures will give these aircraft increased capability against advanced surface-to-air missile systems and future fighter aircraft.

AIR FORCE FIGHTER/BOMBER FORCES

The Air Force provides versatile and responsive striking power for employment worldwide on short notice. For example, the Air Force can move seven to eight FWEs into a theater as an initial response to an MRC, with additional FWEs following within the first month. Long-range bombers also can contribute to an initial response to an MRC, flying directly from the continental United States if need be. The Air Force's ability to provide heavy firepower early in a distant MRC will improve during the late 1990s through selective enhancements to the bomber force, described below.

Air Force fighter and bomber forces are structured to conduct sustained combat operations from land bases at home and abroad. A major strength of these forces is their ability to sustain a high tempo of operations. Where the local infrastructure permits, these forces can operate directly from airfields in a conflict region. If local facilities are limited but include at least a runway and water supplies, expeditionary operations can be supported with bare base kits, such as those used by Air Force combat and support aircraft in the Gulf War.

The effectiveness of early-arriving fighter, bomber, and support forces has improved through the establishment in recent years of three composite wings, each containing a mix of aircraft types. Two air/land composite wings emphasize integrated operations with early-deploying Army forces. An interdiction wing emphasizes more independent power projection. There also is a composite special operations wing capable of rapid response. Additionally, a mix of fighter and support aircraft is maintained in Alaska and at some overseas bases, such as Spangdahlem in Germany. Composite wings enhance the immediate combat capability of air units. Forces train as they would fight, with different types of combat and support aircraft operating in close coordination, as they would in wartime.

The Air Force maintains a significant overseas presence in peacetime, contributing both to deterrence and to crisis-response capability. These permanently stationed overseas forces demonstrate the United States' commitment to friends and allies and help promote regional stability. The Air Force plans to maintain about two FWEs at bases in the western Pacific and two FWEs at bases in western Europe for the foreseeable future. In practice, average deployment levels during FY 1995 exceeded this plan by approximately two FWEs, representing deployments in Southwest Asia and the Adriatic region that are not part of the permanent overseas basing plan.

Table VI-10

Air Force Composite Wings (Combat and Support Aircraft – PAI)

Wing	Air Superiority	Ground Attack	Heavy Bomber	Support Aircraft	Total
Intervention	12	30	6	6	54
Air/Land	0	33	0	33	66

BOMBER MODERNIZATION

The bomber force is composed of B-2, B-1B, and B-52H aircraft. Current and projected inventories of these aircraft are shown in Table VI-11. The force counts reflect the primary aircraft inventory (PAI) and therefore include training aircraft (12 B-1Bs and 12 B-52Hs). These aircraft do not have the weapons loading crews and readiness spares kits that generally are required for forward deployments. At present, the total inventory of 94 B-52Hs and 95 B-1Bs considerably exceeds the number of PAI aircraft that are fully funded in terms of operations and maintenance, load crews, and spare parts in FY 1996-1999. The aircraft that are not PAI are in reconstitution reserve status. All of the B-52Hs and B-1Bs in the inventory, including those in reconstitution reserve, will be kept in flyable condition and will receive planned modifications in a timely manner. The Department plans to increase the B-1B PAI to 82 by 2001, when modern weapons are available to enhance the bombers' effectiveness in conventional operations.

Table VI-11

Air Force Long-Range Bomber Inventory (PAI)

Aircraft Type	FY 1995	FY 1997	FY 1999	FY 2001
B-52H	74	56	56	56
B-1B	60	60	60	82
B-2[a]	6	10	13	16

NOTE: The force structures shown are for the end of the fiscal years.

[a] The total inventory of B-2s (16 PAI) will be achieved in FY 2000.

Congress mandated that no heavy bombers be retired in FY 1995, pending the results of a comprehensive analysis of bomber force requirements. In response to this mandate, the Institute for Defense Analyses (IDA) is performing a bomber force cost-effectiveness study, which is scheduled for completion in April 1995. The IDA study is examining alternative bomber force structures for two nearly simultaneous MRCs in the years 1998, 2006, and 2014. IDA is also assessing the benefits to be gained from various upgrades to bomber aircraft and their weapons. Should additional funds be required for the bomber force, DoD will identify and analyze the consequences of potential offsets. The force structures for the latter years shown in Table VI-11 could change as a result of the findings of the IDA study.

Because of its stealth characteristics, the newest U.S. bomber -- the B-2 -- is extremely difficult to detect, especially at night and in adverse weather. However, the ability of stealth aircraft to penetrate heavy defenses is increased significantly by force enhancement operations such as the use of air-superiority assets and standoff jamming by electronic warfare aircraft. B-2 bombers will be able to carry a full complement of general purpose weapons and cluster munitions as well as the new family of all-weather near-precision (that is, Global Positioning System (GPS) accuracies) and precision munitions, making

them extremely capable and versatile power projection platforms. Current plans call for the procurement of 20 operational B-2s (16 PAI). The first squadron of eight aircraft is expected to become operational in FY 1997.

B-2 capability will increase throughout the decade as new aircraft are delivered and existing systems are progressively upgraded from the test configuration and Block 10 design to the more capable Block 20 and even more effective Block 30 versions. In 1996, Block 20 aircraft will have the Navstar GPS, improved communications and offensive avionics, and a limited ability to deliver GPS-aided munitions. By 2000, the entire B-2 force will achieve the Block 30 configuration, featuring better stealth characteristics, improved offensive and defensive avionics, and the ability to employ a wider range of improved weapons, such as the JDAM. During the transition to the Block 30 standard, some aircraft will be undergoing conversion and will not be immediately available for deployment.

The B-1B, which is programmed for use solely in conventional missions by the end of 1997, will be the backbone of the future bomber force. By the end of the decade, programmed upgrades will give the B-1B the capability to carry newer precision and near-precision weapons. B-1B aircraft also will be equipped with an advanced navigation system integrated with the Navstar GPS, and an improved communications system. Enhancements to the aircraft's onboard computers and electronic countermeasures system are slated to follow around FY 2005. In the near term, certification of the B-1B to deliver the entire family of advanced cluster munitions (CBU-87, CBU-89, CBU-97) will increase the aircraft's effectiveness against large area targets and armored vehicles in low-to-medium threat environments. The JDAM will be integrated on the aircraft in the late 1990s, while the Joint Standoff Weapon and Wind-Corrected Munition Dispenser kit-modified CBUs will be integrated between FY 2002 and FY 2006. This new capability will, in turn, expand the B-1B's delivery options, while increasing the aircraft's survivability and its ability to cover a wide range of targets.

The B-52H is the only launch platform for conventional air-launched cruise missiles (CALCMs). Some B-52s are being equipped to carry Have Nap standoff precision weapons. Planned modifications will enable the B-52H force to carry WCMD and JDAM as well as Harpoon antiship missiles.

In a major regional conflict, heavy bombers would be used to deliver large quantities of unguided general-purpose bombs and cluster munitions against area targets, such as ground force units, airfields, and rail yards. The more advanced munitions now coming on line or in development will enable bombers to bring a wider range of targets under attack, while taking better advantage of their large payload capacity. The long-range capability provided by bombers could make them the first major U.S. weapon system on the scene in a rapidly developing crisis, particularly in regions where the United States does not routinely maintain forces. Here, too, their ability to have an immediate impact on a conflict by slowing the advance of enemy forces, suppressing enemy air defenses, and inflicting massive damage on an enemy's strategic infrastructure will increase dramatically over the next 10 years.

NAVAL AVIATION FIGHTER/ATTACK FORCES

Naval and Marine air wings are self-sustaining forces, capable of conducting prolonged operations independent of overseas basing rights. Rotationally forward-deployed, carrier battle groups and amphibious ready groups provide a prompt means of responding to crises. As discussed in the Maritime Forces chapter, the planned Navy/Marine Corps force structure will sustain about three carrier air wings afloat and five Marine fighter/attack squadrons ashore on a continuous basis. Employed in conjunction with ground and Air Force units, these forces enable the United States both to respond initially to crises and to contribute to sustained combat operations.

Power projection in support of littoral warfare remains a top priority for the Navy. Carrier-based aircraft are capable of a wide range of other functions, however, from overseas presence and humanitarian assistance to peacekeeping and peace enforcement. Because of their inherent flexibility, carrier forces can be tailored to the initial needs of a deployment and then be reconfigured as the operation unfolds, to meet emerging demands.

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, carrier-based aircraft would provide the air support initially required by a MAGTF. Once a foothold had been established in a region, these aircraft and those embarked on amphibious assault ships would move quickly ashore, where they would operate from expeditionary fields, created if necessary by the landing force using temporary matting carried aboard maritime prepositioning ships. Expeditionary airfields include all of the command, control, and logistics elements necessary for combat operations, and they can easily be redeployed to other locations if circumstances warrant.

SPECIALIZED FORCES

Specialized forces have taken on added importance in the post-Cold War era. These forces contribute to all phases of military operations. Three of their most important missions are aerial refueling, electronic combat and suppression of enemy air defenses, and aerial reconnaissance and surveillance.

Aerial refueling is critical to the effective employment of aviation forces. Not only do tanker aircraft facilitate the rapid deployment of combat forces; they have a tremendous force-multiplying effect in the conduct of air operations. Airborne refueling significantly extends the range and endurance of combat aircraft; it increases effective operating tempos; 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 impending retirement of the A-6 force, the Navy will rely primarily on multimission S-3s and F/A-18 E/Fs for tactical airborne refueling support, while the Marine Corps will use KC-130s. In addition, a portion of the Air Force KC-10 and KC-135 fleet is being modified with multipoint refueling capability to increase the Air Force's ability to refuel Navy and Marine Corps aircraft in flight.

Electronic combat and air defense suppression forces locate, avoid, and neutralize enemy air defenses. The Air Force, Navy, and Marine Corps all operate aircraft for these purposes, as shown in Table VI-12.

Table VI-12

Airborne Electronic Warfare Aircraft (PAI as of FY 1995)

Surveillance/Electronic Intelligence	Support Jammers (Standoff and Escort)	Lethal Suppression
Rivet Joint/RC-135 (14 A/C -- Air Force)	EF-111 (24 A/C -- AirForce)	F-4G Wild Weasel (36 A/C-- Air Force)
EP-3 (12 A/C -- Navy)	EC-130 Compass Call (13 A/C -- Air Force)	F-16 HTS [a,b] (72 A/C--Air Force)
ES-3 (16 A/C -- Navy)	EA-6B (60 A/C -- Navy/Marine Corps)	F/A-18 HARM [a,b] (512 A/C-- Navy/Marine Corps)
EA-6B[a] (60 A/C --Navy/Marine Corps)		EA-6B[a,b] (60 A/C--Navy/Marine Corps)

[a] Some aircraft have overlapping capability; the missions noted are secondary.
[b] F/A-18s, EA-6Bs, and F-16s equipped with the HARM Targeting System (HTS) have independent targeting capability similar to that of the F-4G, but with less coverage in both frequency and location.

The EF-111 force will retire during FY 1996. The mission of tactical support jamming for the Air Force will be assumed by Navy EA-6Bs. The Navy will upgrade 20 EA-6Bs (16 PAI) already in the inventory but not previously planned to be part of the combat force structure. The allocation of these aircraft to the combat force, beginning in FY 1997, will reduce the inventory available to offset peacetime attrition. As a result, the overall EA-6B combat force structure will begin declining around the year 2015, a few years earlier than expected previously.

A comprehensive study is being conducted to determine the future adequacy of U.S. electronic warfare capabilities. The study is evaluating requirements for electronic warfare aircraft, aircraft self-protection and expendable countermeasures, and lethal and nonlethal suppression of enemy air defenses. The compatibility of projected electronic warfare capabilities with low-observable technologies also is being investigated. Results from the study will be used to identify capabilities that these forces may require in the long term.

Airborne reconnaissance and surveillance systems are a primary source of information on enemy air and surface forces and installations. As such, they bridge the gap in coverage between ground- and satellite-based surveillance systems and the targeting systems on combat aircraft. Airborne reconnaissance systems fall into two categories: standoff systems, which operate outside the range of enemy air defenses; and penetrating systems, which are employed within enemy air defense range (see Table VI-13).

Table VI-13

Airborne Surveillance and Reconnaissance Forces (Total Active Inventory [a])

Standoff	FY 1995	Planned FY2001	Penetrators	FY 1995	Planned FY2001
E-2C Hawkeye	92	79	RF-4C	18	0
E-3B/C AWACS	34	34	F-14 TARPS (Pods)	49	49
E-8C JSTARS	2	20	F/A-18D (RC)	0	31
U-2R	37	38	Pioneer	43	20
RC-135V/W Rivet Joint	14	14	JTUAV	72/0	216/92
			Hunter/Maneuver		
EP-3E	12	12	MAE UAVs	3	10
ES-3A BGPHES	16	16	HAE UAVs	2	10
OV-1D Mohawk	23	0			
RU-21 Guardrail	3	0			
RV-1D Quicklook	12	0			
RC-12 Guardrail	46	36			
EO-5 ARL	5	6			

NOTE: The force structures shown are for the end of the fiscal years.

[a] Reflects PAI as well as backup and attrition aircraft and reconstitution reserves.

Penetrating systems carry imaging sensors for close-up applications, which make them especially useful for small areas and point targets. At present, most such systems are film cameras carried on reconnaissance-capable fighters. These comparatively unwieldy systems are being phased out; in 1994 the Department decided to retire the last Air Force RF-4C squadron. By the turn of the century, the penetrator force will consist mostly of unmanned aerial vehicles (UAVs). The current force of F-14 Tactical Aerial Reconnaissance Pod System (TARPS) aircraft and a small force of Marine F/A-18Ds carrying electro-optical, infrared, and synthetic aperture radar sensors developed under the Advanced Tactical Air Reconnaissance System (ATARS) program will be maintained as a hedge against uncertainties in UAV acquisition. The sensors in the F/A-18D also may be used in the F/A-18 E/F to replace the F-14 TARPS.

Standoff systems carry long-range sensors, such as radars and signals intelligence (SIGINT) collectors. These systems provide most of the broad-area information used to assess the progress of a combat operation; they also provide targeting data for ground and naval forces and combat aircraft. The most modern and capable standoff systems will be maintained throughout the program period. These include Navy E-2Cs and Air Force 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 SIGINT. The E-8C, the airborne element of the Joint Surveillance Target Attack Radar System (JSTARS), will enter service in 1997. 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. The Navy and Marine Corps operate reserve air wings primarily as round-out units 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, expanding the strategic lift and tanker capability of the reserve components, and giving reserve forces added responsibility for command and control of air defense operations in the continental United States. Two years ago the Navy announced plans to maintain an operational reserve 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 the active force. The Marine Corps has modernized 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 deployments of the Navy's reserve/training carrier.

READINESS AND SUSTAINABILITY

Training and exercise programs 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. For FY 1996, more than 200 joint exercises are planned. These include Cope North in the western Pacific, Bright Star in the Middle East, Global Archer and Roving Sands in the United States, and Fuertes Defensas in Latin America.

Most aviation units have adequate supplies of war reserve spares and munitions. Some shortfalls remain, however, in war reserve spares for F-15E fighters, B-1B bombers, and KC-135 tankers. Those shortfalls will be eliminated in FY 1996 for the F-15E, in FY 1997 for the KC-135, and by the end of the decade for the B-1B.

Peacetime training requirements are now adequately supported by stocks of replenishment spares and other consumable material. Constraints on funding for spare parts procurement could lead to shortfalls in the future, however. In particular, the statutory provision permitting service supply systems to replace only 65 percent of the items that they sell to operational units could result in spare part shortages, even though sufficient funds exist to meet procurement needs. If shortfalls occur, mission-capable rates would drop and spare parts would have to be taken either from operational aircraft or war reserve stocks in order to meet training needs. Waivers provided in the statutes have prevented serious problems thus far, but they also impose a complex accounting process. The Department continues to seek legislative relief from these statutory controls on supply replacement policy.

Unplanned deployments during 1994 led to reductions in the flying hours of some aircraft, with adverse consequences for force readiness. Surge operations undertaken on short notice, as was the case in the Adriatic and Caribbean, inevitably forced compensating drawdowns elsewhere. Contingency operations also displaced some regular training by the forces committed. These problems need to be managed better, and the Department again seeks the assistance of Congress in preserving management and funding flexibility for contingency operations. (These issues are discussed in greater detail in the Readiness chapter of this report.)

MODERNIZATION

The roles and missions performed by aviation forces determine their modernization requirements as well as their overall structure. Meeting future goals will require highly capable aircraft and support systems that are easy to operate and maintain, and that can be procured in sufficient numbers at an affordable cost. Reflecting these considerations, acquisition programs for aviation forces are designed to:

- Sustain aircraft modernization. New aircraft procurement must support long-term force structure goals and protect the U.S. lead in stealth technologies.
- Improve aircraft survivability. Acquisition of advanced standoff weapons will reduce aircraft exposure to enemy air defenses and enhance single-pass target destruction capability, thus

increasing aircraft survivability. Improvements in electronic combat forces will keep those forces capable of countering the most advanced threats.

- Dominate the collection and exchange of intelligence data. Programs in this area will ensure that critical targeting and intelligence information is available immediately to friendly forces, and denied to potential adversaries.

Sustaining Aircraft Modernization

Two major fighter/attack aircraft acquisition programs -- the F-22 and F/A-18 E/F -- are being pursued. The F-22, being developed by the Air Force as a replacement for the F-15, will ensure the continued superiority of U.S. forces against long-term advances in the air-to-air capability of potential adversaries. The F-22's low-observable characteristics, supersonic cruise speed, high maneuverability, and advanced avionics will enhance its effectiveness in the air-superiority role. The F-22 also will be capable of conducting limited air-to-ground operations, carrying two JDAMs internally or -- with a greater chance of detection -- a larger external load.

Table VI-14

Aircraft Modernization Programs

	Current Dollars (Millions)			
	FY1994 Actual	FY1995 Actual	FY1996 Budgeted	FY1997 Planned
F-22 RDT&E				
RDT&E	2,058	2,325	2,139	1,957
Procurement	--	--	--	--
F/A-18 E/F				
RDT&E	1,397	1,250	847	306
Procurement	--	--	237	2,253
JAST				
RDT&E (Navy)	30	98	149	199
RDT&E (Air Force)	--	85	151	199
F-14				
RDT&E	15	41	44	37
Procurement	96	132	59	170
AV-8B				
RDT&E	13	11	11	6
Procurement	159	153	186	390
F/A-18 C/D				
RDT&E	57	62	71	60
Procurement	1,657	1,111	702	257
F-15				
RDT&E	64	107	171	130
Procurement	283	205	94	155
F-16				
RDT&E	59	137	175	153
Procurement	460	185	314	227

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, offsetting some of the capabilities lost with the retirement of the A-6. The first EMD model of the F/A-18 E/F is scheduled to make its initial flight near the end of 1995. 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. The remainder of the fighter/attack force -- F-14s, F-15s, F-16s, A-10s, and F/A-18 C/Ds -- also will receive capability upgrades.

The JAST program, begun in 1993, is advancing toward the definition of a new family of combat aircraft. Studies of the service life of existing aircraft, emerging threats with which they must deal, available technologies, and alternative aircraft concepts are being brought together in setting priorities for aircraft design. The results of this process will be available in time to inform decisions on demonstrator needs, which in turn will support commitments to EMD programs toward the end of the decade. Aircraft emerging from this process early in the next century will fulfill the roles performed by many existing aircraft types, such as the A-6, F-14, F-16, F-111, F-117, and AV-8B. The Department is fully integrating the JAST program with the Advanced Short-Takeoff and Vertical Landing (ASTOVL) technology demonstrator begun by the Advanced Research Projects Agency (ARPA) as the centerpiece of its tri-Service common affordable lightweight fighter program, also a common goal of the JAST program. By combining these programs, the Department will achieve greater economies, while maintaining focus on tri-Service solutions to advanced aircraft design.

Modernization programs for aviation forces will preserve needed design and production capability in the aerospace industrial sector as overall aircraft procurement rates decline. The FY 1996-2001 program protects core industrial base capabilities. Procurement of both the F/A-18 E/F and the F-22 at modest annual rates will preserve aircraft production capabilities for the future, while demonstration aircraft developed under the JAST program will provide continued support for critical aircraft design teams. Highlights of aircraft modernization programs are provided in Table VI-14.

Improving Aviation Force Weapons

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 combat.

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 outset 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 munitions.
- Extending the effective reach of precision weapons far beyond the combat radius of the delivery platform, and with less exposure.

The FY 1996-2001 program reflects one principal change from the munitions modernization plan described last year -- the decision to forgo acquisition of the Tri-Service Standoff Attack Missile (TSSAM). This system experienced significant development difficulties, and the growth in its expected unit cost made it too expensive to justify procurement. As a result of TSSAM's cancellation, the Navy will continue with development of the Standoff Land Attack Missile-Expanded Response (SLAM-ER) variant. The Air Force will begin to investigate means of acquiring a TSSAM-like capability, but at lower unit costs than achieved by TSSAM.

Highlights of munitions programs for FY 1996-2001 are presented below:

- AGM-130. A powered version of the 2,000-pound GBU-15 glide bomb, designed to strike high-value, heavily defended targets. The 298 missiles purchased prior to FY 1994 will be retrofitted to the current, improved configuration with FY 1996 funding. The retrofit includes provision of inertial navigation and global positioning system (INS/GPS) mid-course guidance, which improves the operator's ability to acquire and lock onto targets in the terminal attack phase.
- Sensor Fuzed Weapon (SFW). A tactical munitions dispenser containing 10 BLU-108 submunitions, each with four Skeet warheads. SFW is designed to achieve multiple kills against armored vehicles in day or night and in adverse weather.
- Joint Direct Attack Munition (JDAM). Under the first phase of this program, bombs will be provided with an improved guidance capability based on an inertial navigation system coupled with satellite-borne GPS data. INS/GPS guidance will permit the delivery of free-fall munitions in adverse weather and improve bombing accuracy from medium and high altitudes. A subsequent product improvement program will provide accuracy equivalent to that of today's laser-guided bombs using a sensor or other improvements.
- Joint Standoff Weapon (JSOW). A longer-range, aerodynamically efficient glide weapon with excellent autonomous navigation capability. The initial 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. EMD for both the BLU-108 and unitary variants begins in FY 1995.
- Standoff Land Attack Missile (SLAM). A modified Harpoon antiship missile that incorporates an AGM-65 Maverick imaging infrared seeker and Walleye datalink for man-in-the-loop control. An additional 45 baseline SLAM missiles will be procured during FY 1996 and FY 1997 as development of the SLAM-ER variant continues. SLAM-ER is an upgraded version of the baseline SLAM weapon. It incorporates enhancements in aerodynamic performance, survivability, anti-jam guidance, and hard-target capability, while providing for more rapid mission planning. About 400 SLAM missiles will be converted to the SLAM-ER configuration between FY 1998 and FY 2001.
- Wind-Corrected Munitions Dispenser (WCMD). A modification kit that inertially measures wind and provides corrections to advanced cluster bomb dispensers, thereby improving delivery accuracy from higher altitudes. This modification will be made to the CBU-87 (combined effects munition), CBU-89 (Gator), and CBU-97 (SFW). Two hundred additional EMD units will be procured in FY 1997 to provide an accelerated capability.

Highlights of weapons modernization programs are provided in Table VI-15.

Table VI-15

Aviation Weapons Modernization Programs

Current Dollars (Millions)

	FY1994 Actual	FY1995 Actual	FY1996 Budgeted	FY1997 Planned
JDAM[a]				
RDT&E	73.7	92.8	130.0	122.5
JSOW[a]				
RDT&E	106.5	168.8	125.8	108.9
Procurement	--	--	26.2	88.3
SFW				
Procurement	93.1	114.3	165.5	155.7
SLAM				
RDT&E	17.0	62.9	40.5	35.7
Procurement	86.0	68.9	46.4	25.6

[a] Includes both Navy and Air Force funding.

Dominate the Collection and Exchange of Intelligence Data

The Services are beginning to field a new generation of airborne reconnaissance and surveillance systems that provide real-time information to a variety of users. The fast pace and increased lethality of battlefield operations dictate that intelligence, warning, and targeting data be collected and passed to combat forces in a timely manner. Navy E-2 and Air Force E-3 aircraft that provide airspace surveillance, warning, and fighter control will have their primary sensors upgraded via the APS-145 program and Radar Sensitivity Improvement Program (RSIP), respectively. In addition, E-3s are being equipped with a passive electronic detection system. Production of E-8C (JSTARS) radar surveillance aircraft and ground station modules will continue throughout the 1990s, greatly improving capabilities for detecting and tracking enemy ground vehicles. The Joint Tactical Information Distribution System (JTIDS), already deployed or being installed on many of these command and control aircraft, has been designated one of the Department's primary C^3I data links.

The U-2R force is being equipped with new engines to improve operational performance and extend the system's usable life. Two deployable ground stations also are being fielded. Several sensor improvement programs are underway. The RC-135V/W Rivet Joint and EP-3E forces will continue to operate with preplanned product improvements, pending development of the Joint Airborne SIGINT architecture, intended for use on all airborne reconnaissance systems.

The Department will make significant investments in UAVs during the 1990s. Low-rate production of the Joint Tactical Unmanned Aerial Vehicle (JTUAV) continues. The Hunter short-range UAV, an improved follow-on to the Pioneer system acquired in the mid-1980s, will provide users with continuous streams of real-time imagery. Systems will be procured by the Army, Navy, and Marine Corps. Acquisition of downsized mission control equipment and a smaller air vehicle is programmed, as well as improvements to heavy-fuel engines. The Medium-Altitude Endurance (MAE) UAV system was funded as an advanced concept technology demonstration (ACTD) in FY 1994. High-Altitude Endurance (HAE) UAV ACTDs also were initiated in FY 1994, leading toward demonstration systems that could be deployed during contingencies.

Key elements of airborne surveillance and reconnaissance modernization programs are shown in Table VI-16.

Table VI-16

Airborne Surveillance and Reconnaissance Modernization Programs

Current Dollars (Millions)

	FY1994 Actual	FY1995 Actual	FY1996 Budgeted	FY1997 Planned
E-2				
RDT&E	18.1	51.3	53.0	71.3
Procurement	38.0	282.4	214.2	292.3
E-3				
RDT&E	81.4	85.6	67.8	20.7
Procurement	4.6	137.6	196.1	263.6
E-8				
RDT&E	278.8	190.4	170.6	201.4
Procurement	558.6	597.5	550.2	587.0
U-2				
Procurement	262.2	244.3	227.2	182.0
RC-135				
Procurement	136.6	120.2	113.1	133.5
Endurance UAV ACTDs				
RDT&E	95.0	169.3	185.0	200.0
JTUAV				
RDT&E	67.1	122.3	83.4	21.2
Procurement	65.4	202.8	76.9	270.4

CONCLUSION

Aviation forces are well suited to meet the challenges of the new security environment. The flexibility and worldwide deployability of these forces make them an early and critical element of military operations. The force structure and acquisition initiatives planned for coming years will preserve the high effectiveness that these forces now possess, while making the selective enhancements needed to meet future demands.

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 in distant regions, while sealift allows the deployment of large numbers of heavy forces as well as fuel and supplies. In many instances, forces are able to draw on equipment and materiel prepositioned at sea or on land near the location of a crisis, so prepositioning is also considered a mobility program. 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 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 post-Cold War era, the drawdown of 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 a central role in the U.S. defense strategy. They are a vital component of the nation's response to contingencies ranging from emergency evacuations of U.S. citizens to major regional conflicts (MRCs). In peacetime, they contribute to overseas presence and humanitarian assistance missions.

Major Regional Conflicts

Mobility forces are key to the deployment and sustainment of U.S. forces in MRCs. Should a conflict erupt with little warning, the United States would want to respond promptly and with sufficient strength to help indigenous forces halt the aggression and restore the peace. Airlift, augmented by prepositioning, would carry out the initial deployments, which would consist primarily of aviation forces, light ground forces, and some heavier ground elements. The remaining heavy combat forces would follow by sea.

Intratheater mobility forces would move arriving forces to initial operating locations, support them over the course of the conflict, and redeploy them as necessary to meet operational demands. In addition, intratheater forces perform a variety of special missions, such as airdrops and medical evacuations.

Intervention and Peace Operations

Though smaller in scale than a major regional conflict, interventions and peace operations can still place heavy demands on mobility forces. As in a major conflict, mobility forces would contribute both to the initial deployment and to the sustainment of the operation. Depending on the location, significant amounts of materiel might have to be moved, particularly if U.S. forces were sent to a region where the infrastructure was limited and host nation support was either lacking or not immediately available.

Humanitarian Assistance

Mobility forces often are first on the scene with humanitarian assistance, bringing relief workers and supplies. 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 1994, U.S. mobility forces played major roles in relief efforts in Rwanda and the former Yugoslavia.

Overseas Presence

In the course of their 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 the United States' commitment to particular nations or regions.

MOBILITY REQUIREMENTS

The Mobility Requirements Study (MRS), completed in 1992, defined mobility requirements for the post-Cold War era. It considered scenarios involving major regional conflicts in Southwest Asia or Korea, concurrent conflicts in those locations, and lesser regional contingencies. To meet projected mobility needs, the study recommended the procurement of 120 C-17 aircraft, acquisition of additional medium-speed sealift vessels and afloat prepositioning ships, and enhancements to the ability to move forces to ports of embarkation in the United States. The Bottom-Up Review (BUR) reaffirmed the value of such enhancements and identified a need for additional prepositioning in Southwest Asia and Korea, to improve capabilities for very short-warning or nearly simultaneous conflicts. At the same time, the BUR made a number of changes in the overall force structure and defense strategy that had implications for mobility. Accordingly, over the past year, the Department has updated the MRS to reflect those changes, particularly as they relate to the employment of U.S. forces in major regional conflicts.

As noted earlier, mobility forces would be heavily involved in all phases of a major conflict, contributing both to the deployment and sustainment of combat forces. Immediately upon a decision to commit forces, ground units and aviation support elements would be dispatched to the region from bases in the United States and abroad. These forces would deploy by air, and would draw the bulk of their equipment and supplies from stocks prepositioned for them on land or afloat. They would be joined in the theater by additional Marine ground units arriving on amphibious ships. Combat aircraft would self-deploy, relying on tankers for aerial-refueling support en route to their destination. These early-deploying forces, operating in conjunction with naval units at sea, would mount an initial defense and secure ports and airfields for the arrival of additional forces.

As the buildup continued, heavy combat and support forces would begin arriving by sea, with fast sealift ships making the first deliveries. Airlift would continue moving personnel and high-priority supplies and equipment into the theater. Once sufficient forces were available, a large-scale, air-land counteroffensive would be launched. Mobility forces would provide critical support for this phase of the operation, delivering reinforcements and any additional equipment and supplies needed to sustain combat.

FORCE STRUCTURE AND CAPABILITIES

The Department of Defense has a long-standing policy of relying on commercial transportation resources to the maximum extent possible in meeting military requirements. Today, DoD depends almost entirely on commercial ground and rail systems to move forces to ports of embarkation in the United States. Commercial aircraft provide the majority of passenger airlift capacity and make a significant contribution to the movement of military cargo, while merchant ships provide most of the capacity to move containerized cargo by sea. There are, however, certain militarily-unique capabilities that the civil sector cannot provide. Mobility forces supply those capabilities as well as 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.

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 19 percent of the cargo capacity. With the addition of Stage II aircraft, those figures rise to 28 percent and 47 percent, respectively. Aircraft from Stage III bring the

CRAF contribution, as a share of total U.S. long-range commercial aircraft capacity, to 41 percent for passengers and nearly 72 percent for cargo.

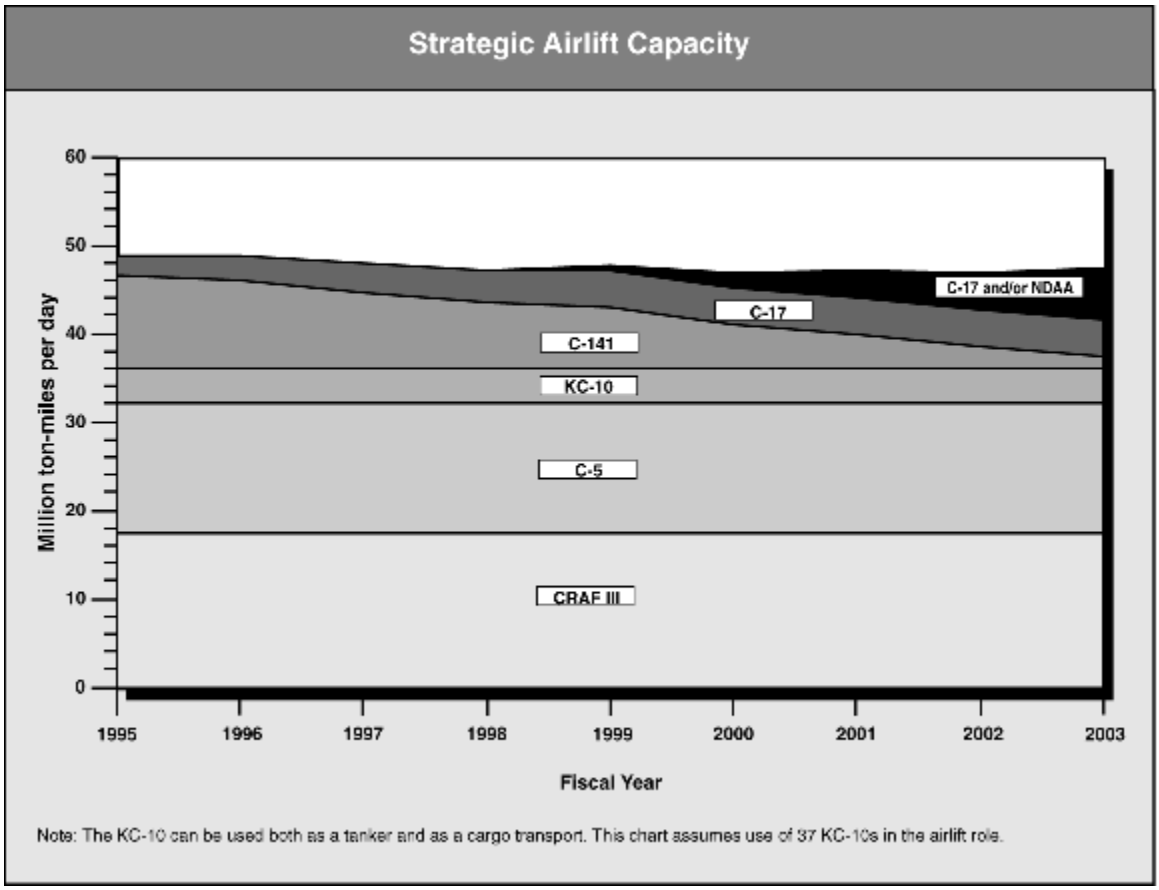
Stages I and II of CRAF are activated by the Commander in Chief of the U.S. Transportation Command, with the approval of the Secretary of Defense. Activation of Stage III requires a declaration of national emergency by the President or Congress. Accordingly, Stage III aircraft would be called on only for the most demanding military deployments.

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 conflict (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 and therefore cannot operate effectively on austere airfields.

Military aircraft provide the full range of these capabilities. Today, the military fleet consists of 104 C-5s (primary aircraft inventory, or PAI), 199 PAI C-141s, 12 PAI C-17s, and 415 PAI C-130s. These aircraft are assigned to active, Air National Guard, and Air Force Reserve squadrons. The C-5s and C-141s in active squadrons are flown by both active and reserve associate crews. For lesser regional conflicts, humanitarian assistance, and peacekeeping operations, only active-duty crews and reserve crews serving on a voluntary basis normally would be available.

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. In 1993, 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 resulted in the imposition of payload restrictions. The wing problems have since been corrected, and all of the aircraft were returned to unrestricted service last year.

The chart below shows the current and projected contribution of military and CRAF aircraft to total U.S. intertheater airlift capacity.



Aerial Refueling

For FY 1995, the long-range aerial-refueling fleet consists of 478 PAI KC-135s and 54 PAI KC-10s. These aircraft support the deployment and employment of conventional forces, with the KC-135 force also providing airborne-refueling support for nuclear-armed bombers. The KC-135 and KC-10 also can carry cargo, with the latter aircraft possessing a significant capability to perform airlift and tanker missions simultaneously. More than half of the aircraft in the KC-135 force are operated by the reserve component. All KC-10s are maintained in the active force; these aircraft are flown by both active and reserve associate crews.

Table VI-17 shows the current and projected inventory of long-range tankers.

Table VI-17

Long-Range Tanker Aircraft (PAI)

	FY 1994	FY 1995	FY 1996	FY 1997
KC-10	54	54	54	54
KC-135[a]	489	478	472	472

[a] Includes active and reserve components.

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 to move the equipment of combat units; and tanker capacity, for fuels. In addition, the older breakbulk ships in the inventory can move both military equipment and supplies.

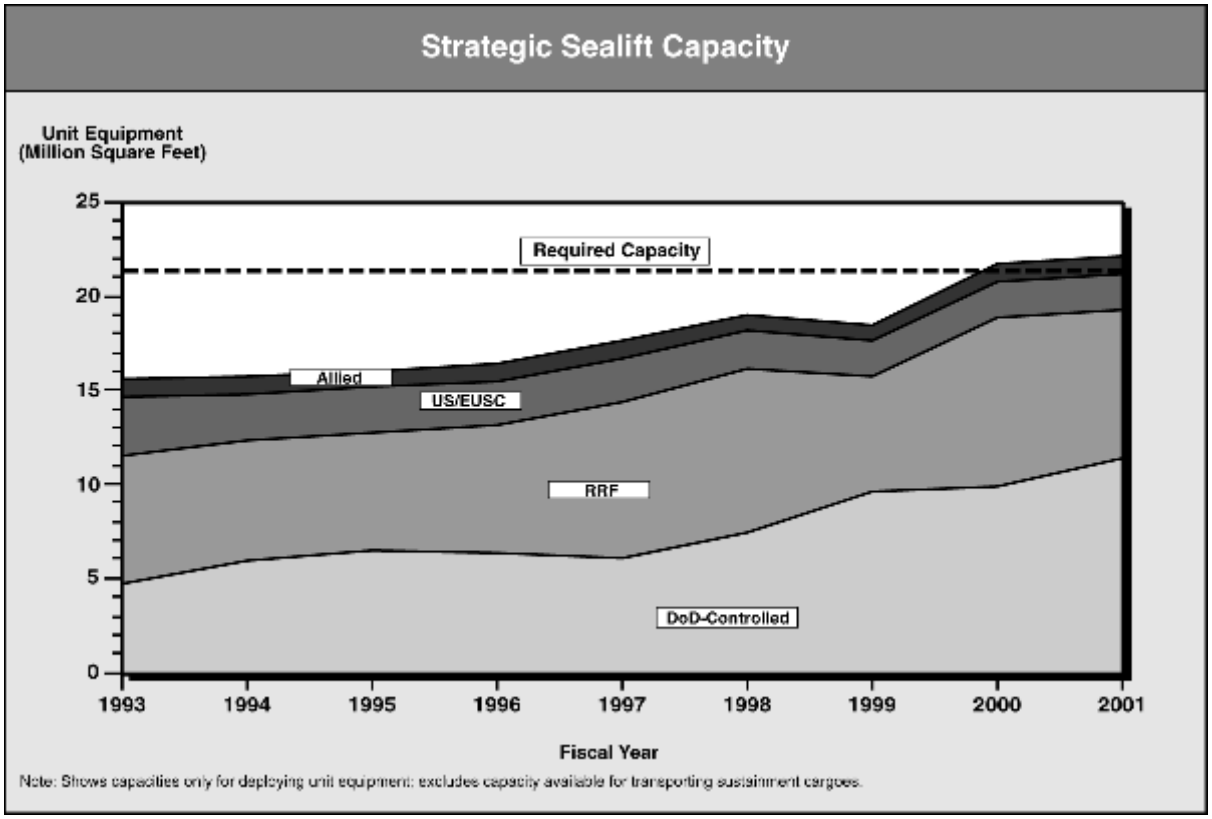
The U.S.-flag commercial fleet contains 248 ships with military utility. These include 127 dry cargo ships, 119 tankers, and two passenger ships. Another 116 vessels that could contribute to military missions -- 45 dry cargo ships, 64 tankers, and seven passenger ships -- are maintained in the effective 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 the ships' requisitioning. Although DoD would prefer to use U.S.-flag vessels with U.S. crews, much of the available tanker capacity is in the EUSC fleet.

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 deployment timetables of regional contingencies, it is necessary to acquire RO/RO and similar ships and maintain them in a high state of readiness.

Today, the government maintains 90 dry cargo ships, seven tankers, and four passenger ships in reserve status for use in military operations:

- 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 80 dry cargo ships, seven tankers, and two passenger ships are in the Ready Reserve Force (RRF), which is managed by the Maritime Administration (MARAD) within the Department of Transportation (DOT).



The chart above shows the current and projected contribution of each source of sealift to moving unit equipment. Also shown is the RO/RO capacity (square footage) recommended in the 1994 update of the MRS for the deployment of forces in two nearly simultaneous major regional conflicts. 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 major regional conflicts.

Prepositioning

By prepositioning unit equipment and war reserve materiel afloat and ashore near potential operating locations, the United States increases the number of forces that can be deployed and supported quickly in a crisis. This year, DoD is using 31 ships for afloat prepositioning. Of these, 21 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 Marine brigade-equivalent. The ships are routinely deployed in the western Pacific, Indian Ocean, and Mediterranean Sea, from which they can quickly be dispatched to the scene of a crisis, remaining offshore pending a decision to commit U.S. forces. All three squadrons were used in the Gulf War and have been fully reconstituted. One squadron was moved to the Persian Gulf last fall as a key element of the U.S. response to the Iraqi buildup of forces near Kuwait. An additional ship, to be acquired with funds provided in FY 1995, will increase the capability provided by the MPS force.

- Eight RRF ships carry equipment and supplies for an Army armored brigade and selected combat support and combat service support units, as recommended in the MRS. These vessels will be returned to reserve status when the large medium-speed roll-on/roll-off ships (LMSRs) being procured for afloat prepositioning are delivered.
- The remaining 10 ships carry munitions, medical material, fuel, equipment for discharging petroleum from tankers offshore, and additional equipment for units required early in a deployment. Eight of these ships are under long-term charter to the Department of Defense; the other two ships are tankers tendered from the RRF.

INCREASING CAPABILITIES TO MEET FUTURE CHALLENGES

The Department has embarked on an ambitious modernization program to replace obsolete mobility forces and achieve the force deployment goals established in the Bottom-Up Review. The mobility capabilities needed to meet these objectives were defined in the 1994 update of the MRS, known formally as the Mobility Requirements Study Bottom-Up Review Update, or MRS BURU.

Airlift Programs

Based on the results of the MRS BURU, DoD has established an intertheater airlift objective of between 49 and 52 million ton-miles per day of cargo capacity. The precise amount of airlift needed will depend on the level of prepositioning that can be achieved in Southwest Asia and Korea. DoD is continuing to evaluate prepositioning options, as well as other potential warfighting enhancements, that could result in changes to the airlift objective.

Airlift investments in coming years will focus on replacing the aging fleet of C-141 intertheater aircraft. Production of the C-17 transport, the planned successor to the C-141, remains capped at 40 planes while the Department monitors the progress of the prime contractor in correcting technical problems and improving cost and schedule performance. Under a parallel program, the Department is assessing the capabilities and costs of non-developmental airlift aircraft (NDAA) that could supplement or complement the C-17. A review by the Defense Acquisition Board in November 1995 will examine the results of both the C-17 program and the NDAA competition. Through this approach, the Department expects to reach a decision by the end of 1995 on the most cost-effective mix of airlift aircraft for meeting future needs.

Enhancements in intratheater capability will come with the introduction later in this decade of the new J version of the C-130 tactical transport. The upgraded model incorporates a redesigned two-crew-member flight station, a modern-technology engine and propeller system, and an integrated digital avionics subsystem. The C-130J will provide significant operating and support cost savings over older C-130 models, which it is slated to replace. Funds to begin production of the aircraft are requested this year.

Sealift and Afloat Prepositioning Programs

The Mobility Requirements Study recommended acquiring an additional 5 million square feet of shipping capacity, both to preposition equipment for a heavy Army brigade and to augment surge shipping capability, in order to meet the objective of deploying a heavy Army corps within 75 days. That requirement, which was validated by the MRS BURU, will be achieved through the acquisition of 19 LMSRs. As currently envisioned, the LMSR program will provide 2 million square feet of afloat prepositioning space for Army combat and support equipment, and 3 million square feet of transport space for early-deploying heavy Army divisions and their support equipment. The amount of LMSR capacity dedicated to prepositioning may increase in the future if requirements dictate. The FY 1996-2001 program includes $2.5 billion in ship construction funds for the LMSR program.

The Mobility Requirements Study also recommended an expansion of the RO/RO capacity of the RRF by roughly 2.8 million square feet to help meet surge demands early in a deployment. That translates into a total requirement for 36 RO/RO vessels. The RRF currently includes 29 such ships, and one additional vessel was purchased in FY 1995. Funds are requested in FY 1996 for two more ships, and the Department hopes to acquire the remaining four vessels over the next several years.

The Departments of Defense and Transportation have worked closely together to improve the readiness of RRF ships following their use in the Gulf War. Sustaining the higher readiness levels that have been achieved will require stable investments in the RRF in the years ahead. Beginning in FY 1996, the Ready Reserve Force will be financed through the National Defense Sealift Fund (NDSF), which is administered by DoD. Funding for the force will therefore appear in the DoD budget rather than in the budget request for the Department of Transportation. Moving the RRF into the defense budget will further consolidate sealift funding in the NDSF, allowing RRF requests to be considered in the context of other military-related sealift programs. The Maritime Administration will continue to manage the RRF, as it has in the past.

Programs for Prepositioning Ashore

The Army is in the process of restructuring its unit equipment prepositioning worldwide. Four heavy brigade sets of prepositioned equipment will be maintained in central Europe -- down from the nine sets prepositioned during the Cold War years. This materiel will ensure the United States' ability to meet commitments to NATO's multinational corps and rapid-reaction forces. A fifth brigade set, in Italy, is available for use on NATO's southern flank or elsewhere in the region. In Southwest Asia, the battalion set of equipment already in Kuwait is being expanded to brigade size. Negotiations are under way with other nations in the region to preposition a second brigade set and divisional support equipment. These two sets, in combination with the brigade set afloat, will provide the capability to deploy an entire heavy division rapidly to Southwest Asia. In addition, an agreement was reached with the Republic of Korea in 1994 to preposition equipment for a heavy Army brigade in that nation. Together with the forces that routinely are deployed in Korea, this will enable a full division to be fielded quickly in the event of a crisis. In combination, these programs will achieve the prepositioning objectives established in the Bottom-Up Review.

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. Similarly in Southwest Asia, although the United States continues to seek burdensharing from the Gulf states, congressional support for military construction of storage facilities in that region is key to the success of the nation's global prepositioning strategy.

CONCLUSION

A robust mobility capability is essential to meeting post-Cold War demands with fewer forces and a reduced permanent overseas presence. The FY 1996-2001 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 are increasingly important in the current international environment: (1) they expand the range of options available to decisionmakers confronting crises and conflicts below the threshold of war, such as terrorism, insurgency, and sabotage; (2) they act as force multipliers in support of conventional forces engaged in major conflicts, thus increasing the effectiveness and efficiency of the overall U.S. military effort; and (3) they provide unique capabilities for conducting activities in support of noncombatant missions such as humanitarian civic action and security assistance, as well as in support of peace operations.

SOF'S HERITAGE: ROLES AND MISSIONS

SOF have a dual heritage. They are the nation's 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 SOF roles is at the heart of each of the special operations activities.

- Direct Action. In pursuit of important targets located within hostile or denied territory, SOF units may employ raid, ambush, or direct assault tactics.
- 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.
- 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.
- Foreign Internal Defense. 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.
- Civil Affairs (CA). CA involve coordinating U.S. military activities with foreign civilian officials; U.S. government civilian agencies; and international, nongovernmental, and private volunteer organizations.
- Psychological Operations (PSYOP). PSYOP activities are intended to influence the attitudes and behavior of foreign audiences.
- Counterterrorism. The primary mission of SOF in this interagency activity is to apply highly specialized capabilities to preempt or resolve terrorist incidents abroad.
- Humanitarian Assistance. To carry out worldwide humanitarian and disaster relief programs consistent with U.S. foreign policy.
- Theater Search and Rescue. Employment of specialized SOF aircraft and uniquely qualified SOF crews for the rescue of personnel from enemy territory or denied areas whenever conventional combat search and rescue techniques and capabilities are inadequate.
- Collateral Mission Areas. SOF's additional collateral activities missions are security assistance, counterdrug activities, peacekeeping, personnel recovery, special activities, coalition warfare, and antiterrorist and other security activities including measures to protect individuals and property from terrorist attack. In these areas, SOF share responsibility with other forces as directed by the geographic combatant commanders.

SOF'S ROLE IN SUPPORT OF DEFENSE STRATEGY

SOF will continue to be a strategic asset and undertake their traditional, additional, and collateral missions in the new international environment. Because of their flexible nature, SOF need fewer modifications such as specialized training than most forces which have trained primarily for conventional missions. However, there has been a shift in mission emphasis as SOF are oriented to the new security environment characterized by 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 peace operations, 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 deterring, destroying, or defending against it. PSYOP can support deterrence by communicating to foreign audiences a U.S. commitment and capability to prevent the proliferation and use of WMD. SOF direct action capabilities contribute to deterrence and destruction options by providing a precision strike capability against completed weapons, storage facilities, and command 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 -- MAJOR REGIONAL CONFLICTS

SOF are force multipliers for U.S. conventional forces combatting 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 and facilitated coalition warfare. 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 immediate post-conflict restoration.

SOF are particularly well suited to conventional coalition warfare. One SOF contribution to Operation Desert Storm 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.

SOF AND REGIONAL DANGERS -- LOW-INTENSITY CONFLICT

SOF have 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. U.S. efforts to counter low-intensity threats are not focused on traditional military objectives. They are not aimed at destroying enemy forces or capturing terrain, but rather at changing an adversary's policy without resorting to the expense and risk of war. However, if the United States treats low-intensity conflicts as merely scaled-down versions of conventional war, it will not succeed in these missions, or succeed only at a great cost in lives and resources.

Low-intensity conflict, as a component of operations other than war, will continue to concern the United States. Terrorism, subversion, insurgency, and coups d'etat will continue to be some of the principal means by which national and subnational actors carve out their places in the 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 United States cannot rely alone on a well-honed conventional military capability that can be unleashed only when U.S. vital interests are directly threatened.

SOF AND THE CHALLENGES OF DEMOCRATIZATION

Many of the skills in the SOF inventory are directly applicable to supporting friendly, democratic regimes. Due to their linguistic ability and cultural sensitivity, they can quickly establish an effective working rapport with foreign military and paramilitary forces and, when required, government officials. Specifically, SOF (especially CA, PSYOP, and Special Forces (SF)) can assess appropriate host nation projects, conduct disaster assistance or humanitarian assistance planning seminars, and assist interagency coordination, foreign liaison, and public information programs. Operation Uphold Democracy is a classic examples of how unique SOF language and cultural skills can be successfully applied in the initial stages of a peacetime military campaign plan.

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 SF personnel attached to them for overseas peacetime missions. Prior to deployment, these SOF can train members in the cultural aspects of their projects and how to deal with local military officials and civilians with whom they may come in contact. During deployment, SOF can assist them in coordinating with local representatives and the 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 often differ from conventional operations in degree of physical and political risk, mode of employment, independence from friendly support, and dependence on detailed intelligence and indigenous assets.

In major regional 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 is taking steps 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 a situation 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 diminish credibility. SOF must become better adapted to working with U.S. government agencies so as to provide the extra options for decisionmakers needing 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 closely coordinated at the interagency level.

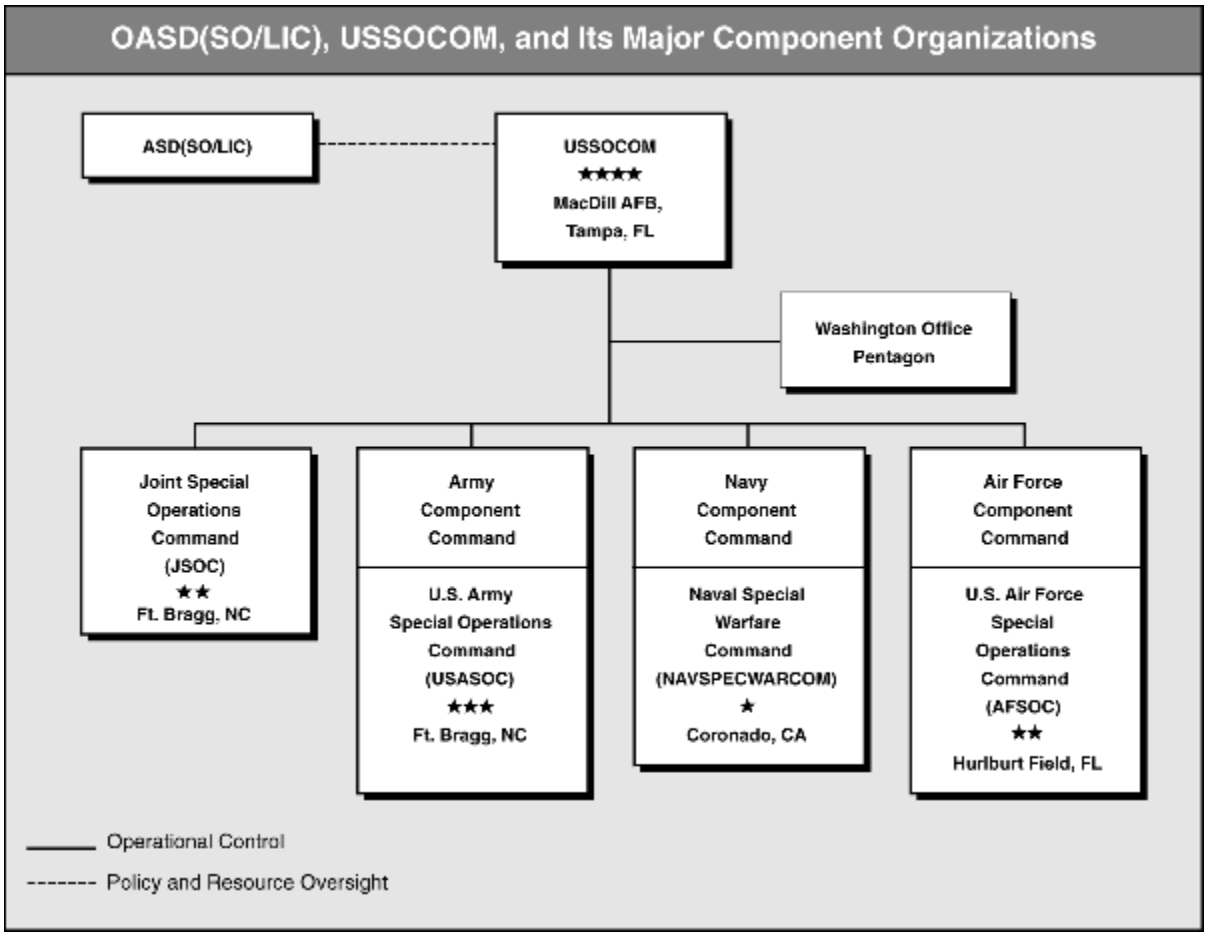
CURRENT AND RECENT OPERATIONS

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 U.N. weapons and munitions (chemical, biological, and nuclear) inspection effort in Iraq.
- SOF provided liaison support to the various coalition participants engaged in the U.S.-led UNITAF operation in Somalia (December 1992 to April 1993).
- SOF provided Task Force Ranger and the Quick Reaction Force with various capabilities during 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.
- SOF successfully applied language and cultural skills in the initial stages of Operation Uphold Democracy in Haiti.
- SOF assisted the U.N.-sponsored humanitarian effort in the former Yugoslavia during Operation Provide Promise (July 1992 to Present).
- PSYOP and Civil Affairs specialists continue to assist military planners in U.S. European Command in contingency planning for various potential democratization support missions.
- SOF continue to support U.S. drug law enforcement agencies in counterdrug operations in Latin America. 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 285 counterdrug missions in support of the Drug Enforcement Agency, the U.S. Information Agency, and the U.S. Country Teams' Narcotics Affairs Staffs.

The most telling evidence of the utility of SOF in the new security environment is their extremely high operations tempo in 1994: SOF conducted over 2,216 deployments (involving more than 14,000 personnel) to 139 countries to accomplish tasks in their primary mission areas. These numbers reflect a 21 percent increase over 1993 in the number of missions.

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 46,000 active and Reserve personnel from the Army, Navy, and Air Force are assigned to USSOCOM. SOF are organized into 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. SOF are normally employed at the sub-unified theater Special Operations Command (SOC).

Army Special Operations Forces include Special Forces (Green Beret), Ranger, Special Operations Aviation (SOA), PSYOP, CA, Signal, Support, and Headquarters units under U.S. Army Special Operations Command (USASOC). Special Forces are organized into five active and two Army National Guard Groups. The Ranger regiment consists of three battalions, based at three locations across the United States. SOA consists of one active regiment in the United States and one detachment in Panama. PSYOP is organized into three groups, one active and two reserve. The CA force consists of one active duty battalion and the following U.S. Army Reserve (USAR) structure: seven general purpose brigades and 24 battalions. Ninety-seven percent of the CA force is found in the USAR.

Naval Special Warfare (NSW) forces support naval and joint special operations within the unified commands. NSW SOF is organized into two Naval Special Warfare Groups, each with three SEAL Teams of 10, 16-man Platoons and a SEAL Delivery (SDV) Team; two Special Boat Squadrons with a total of four Special Boat Units and eventually 13 Patrol Coastal class commissioned 170-foot ships; and four Naval Special Warfare Units, which are 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 are organized into one active Special Operations Wing, two active Special Operations Groups (one each in Pacific and European commands), one Air Force Reserve Special Operations Wing, one Air National Guard Special Operations Group, and one active Special Tactics Group. These units perform long-range infiltration, aerial refueling, resupply, exfiltration, or combat rescue 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

In the future, the demand for forces that can selectively respond to diverse regional concerns will be greater than ever. With this in mind, the following themes will guide the SOF community during this decade:

- Ensure maximum flexibility consistent with full accountability. SOF missions are fluid, shaped by political context and tactical developments. 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 bear on security challenges.
- Continue investing in science and technology and maintain technical superiority in weaponry, material, and delivery systems.
- Prepare for the kinds of conflicts (terrorism, insurgency, subversion, sabotage, etc.) that religious, ethnic, and nationalisitic movements are likely to spawn.
- Stress SOF utility for forward-basing, quick deployment, and adaptability to regional contingencies.
- Integrate SOF more fully with conventional forces and other U.S. government agencies.
- Design force structure to reflect the proper mix of 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 emphasized in the National Security Strategy. Many of these missions require traditional SOF capabilities, while others such as peacekeeping, peace enforcement, and counterproliferation 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 continue to integrate with conventional forces, other U.S. agencies, friendly foreign forces, and other international organizations (for example, the United Nations) -- while preserving the autonomy necessary to protect and encourage the unconventional approach that is the soul of special operations. This interoperability will facilitate meeting the major challenges 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 in support of national security objectives. The main goals established by the President's *National Security Strategy of Engagement and Enlargement* in this area include freedom of access to and use of space; maintaining the U.S. position as the major economic, political, military, and technological power in space; deterring threats to U.S. interests in space and defeating aggression if deterrence fails; preventing the spread of weapons of mass destruction (WMD) to space; and enhancing global partnerships with other space faring nations across the spectrum of economic, political, and security issues. DoD space forces will provide the means to exploit and, if required, control space to assist in the successful execution of national security strategy and national military strategy.

Space systems provide force multipliers that are increasingly important for sustaining an effective level of defense capability as overall U.S. force structure is downsized and restructured. Space forces meet a wide range of requirements critical to the National Command Authority (NCA), combatant commanders, and operational forces. The global coverage, high readiness, nonintrusive forward presence, rapid responsiveness, and inherent flexibility of space forces enable them to provide real-time and near-real-time support for military operations in peacetime, crisis, and across the entire spectrum of conflict. In recognition of the leverage to be gained by fully utilizing space capabilities, DoD is working to normalize space across the Department by integrating space forces with land, sea, air, and special operations forces.

SPACE FORCES AND NATIONAL DEFENSE

Space forces are fundamental to modern military operations. They are playing a central role in the ongoing revolution in warfare because of their unique capabilities for gathering, processing, and disseminating information. As demonstrated during the Persian Gulf War of 1991, space systems can directly influence the course and outcome of war. For example, space systems helped confer a decisive advantage upon United States and friendly forces in terms of combat timing, operational tempo, synchronization, maneuver, and the integrated application of firepower. These inherent strengths of space forces will contribute directly to the deterrent effectiveness of U.S. armed forces.

Space Systems and C^4I

Space forces provide key capabilities to integrate and deliver command, control, communications, computer, and intelligence (C^4I) support to land, sea, air, and special operations forces. In the planning phase of military operations, space forces provide enemy order of battle, precise geographical references and elevations, threat locations and characteristics, and accurate cartography and geodesy. Command and control is enhanced by instantaneous communications and coordination of forces, near-real-time surveillance and reconnaissance, meteorological conditions, and situational awareness of the battlefield.

Space forces also provide data that is essential to military forces during the employment phase of military operations. Information provided by space systems may enable precision weapons to strike targets more effectively in any weather, day or night. Forces enroute have access to precise navigation, location, and timing information as well as continuous communications with the command element and other employed forces for coordinated strikes. In addition, space assets enable secure communications among all functions in a military operation. The net result is the ability to efficiently and effectively employ forces to achieve desired objectives with a minimum of casualties and collateral damage.

In short, space-based force multipliers help to improve operational effectiveness, efficiency, and interoperability; maintain high technological superiority; and support worldwide deployment, sustainment, and operations of U.S. land, sea, air, and special operations forces. By providing almost global coverage, space forces help to compensate for reductions of forward positioned infrastructure and provide ready, in-place capabilities to support U.S. forces worldwide.

Space Power and Deterrence

Space forces are an integral element of the overall deterrent posture of the U.S. armed forces. Any nation contemplating an action inimical 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. As the United States draws down forces from overseas bases, space systems continue to provide nonintrusive presence because of their near-global coverage. Space forces thus help ensure that hostile actions will be discovered by the United States and introduce an element of uncertainty into the minds of potential adversaries.

More specifically, 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 force against the United States, its armed forces, allies, and friends. Space systems perform global monitoring and are often the first to spot impending conflicts, allowing diplomatic actions to avert war. 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 force are unacceptable to a potential adversary.

Space forces also are essential for ensuring that U.S. land, sea, air, and special operations forces are capable of conducting operations against adversaries armed with WMD 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 WMD and missile systems, as well as provide for the alerting, survival, and protection of U.S. forces against hostile missile launches.

Furthermore, space forces improve the effectiveness of active and passive defenses measures. Space systems will support the operations of active defenses which can intercept nonstrategic ballistic and cruise missiles and prevent or limit contamination should the missile be carrying a nuclear, biological, or chemical weapon. Space systems technologies are being investigated to allow cueing 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 strategic ballistic missile launch detection; limited theater ballistic missile launch detection; approximate impact area prediction; potential target acquisition sensor cueing; battle management, command, control, and communications; and intelligence and missile warning dissemination.

Space Systems 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 capacity to operate with other

nations' forces. Space systems will 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 help enable the United States to achieve information warfare objectives in a military theater of operation. This could greatly enhance U.S. and allied ability to fight on more favorable terms. The ability to provide C^4I support to U.S. forces, and deny such support to an adversary, will enable combatant commanders and operational forces to plan and react faster than an adversary and thereby dictate the timing and tempo of operations. The responsiveness of in-theater exploitation and dissemination of space sensor information is a key factor.

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. 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. The spread of space capabilities compounds the dangers to U.S. national security posed by the proliferation of nuclear, biological, and chemical weapons, missile systems for their delivery, and advanced conventional weapon systems.

Consequently, DoD must be able to ensure freedom of action in space for friendly forces and, when directed, limit or deny an adversary's ability to use the medium for hostile purposes. To ensure space control, DoD must sustain and improve capabilities to surveil and monitor all militarily 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 of space technology, products, and data; and agreements or arrangements which limit or deny foreign acquisition of, or access to, space systems, technology, products, and data which could provide support to hostile forces.

MAJOR DOD SPACE PROGRAMS

Space Launch

Space launch is a key enabling capability for DoD to exploit space. Current U.S. space launch systems, however, do not meet all DoD needs and are becoming increasingly costly to use. A basic question for the past several years has been what level of DoD investment is appropriate to maintain existing capabilities and to provide for future space launch capability given current and expected fiscal constraints.

The President's National Space Transportation Policy, approved on August 5, 1994, seeks to balance efforts to sustain and modernize existing launch capabilities with the need to invest in the development of improved future capabilities. In that policy, DoD is designated as the lead agency for improvement and

evolution of the current expendable launch vehicle (ELV) fleet, including appropriate technology development. The DoD objective for this effort is to reduce costs while improving reliability, operability, responsiveness, and safety.

In order to implement this guidance, DoD is initiating an evolutionary ELV program. This program will eventually replace the medium and heavy-lift launch systems currently in the inventory. The program is defining a new relationship with the launch industry emphasizing a measured development effort. DoD seeks to use innovative methods to allow U.S. industry a greater leadership role in free market access to space. The current medium launch vehicle class will be phased out as early as 2001, and the heavy as early as 2004.

The Department recently completed an assessment of the defense related space launch industrial base. The basic conclusion of the assessment was that the industrial base has sufficient capability to meet defense needs today. However, there is significant overcapacity in some portions of the base which will require industry consolidation. Relatively stable commercial/defense demand, the predominantly dual-use nature of the base, and specific actions to meet DoD requirements, such as the ELV initiative, will ensure an adequate industrial base.

Space-Based Infrared Mission Area

After the cancellation of the Follow-on Early Warning System (FEWS), the Department embarked on an intensive study to review the space-based infrared (SBIR) mission area. The goals of the SBIR study were to review infrared requirements needed to protect the United States within the context of two major regional contingencies and intelligence community needs, develop architectures to satisfy those requirements, and make a programmatic recommendation for system acquisition.

The SBIR study was notable in two areas: the process for conducting the study and the results the study produced. The process brought together the various military and intelligence disciplines which use infrared data and developed a comprehensive set of requirements categorized into four areas: missile warning (strategic and theater), missile defense (national and theater), technical intelligence, and battle space characterization. Battle space characterization reflected the needs of the combatant commanders for situational awareness. Previously generated requirements for SBIR systems, new requirements, and those developed by the intelligence community were reviewed, analyzed, and adjusted to reflect current guidance.

The consolidated set of requirements was then used to develop a range of candidate architectures. These included satellite constellations in highly elliptical orbits, geosynchronous orbits, low earth orbits, and various combinations of these orbits. In several cases, requirements which were driving the architectural design were revisited to ensure the validity of the requirement.

Based on the SBIR study, DoD is proceeding with the development of a new high-altitude constellation of infrared detection satellites consisting of both highly elliptical and geosynchronous elements. The planned first launch of this new system is 2002. A flight demonstration of low earth orbit satellites will be conducted to mature this technology and to investigate further phenomonologies in additional infrared frequencies. Furthermore, the high altitude system will be designed to include the capability to integrate a low orbit component if the need arises. Deployment of the low-altitude component may also permit the size of the high-altitude constellation to be reduced.

Military Satellite Communications

The U.S. Army operates and mans the Defense Satellite Communications System (DSCS) for DoD through the Army Space Command at remote sites throughout the world. To update this capability, DoD's primary effort in satellite communications is the Milstar program. Conceived during the Cold War, the program was significantly restructured following the Bottom-Up Review (BUR) to reflect the increased tactical needs of current defense planning. The emphasis of the Milstar program has shifted from the provision of low data-rate, highly survivable communications to medium data-rate communications that will provide survivable, difficult to detect, jam-resistant communications to tactical forces worldwide without reliance on foreign-based ground relays. This new emphasis was embodied in a redesign of the Milstar II system.

The BUR not only addressed the system requirements but also the affordability of the program. As a result, the constellation size for the system was reduced from six to four satellites with a determination to seek a less expensive alternative to the current design beginning late in this decade. The Milstar III program will seek to provide an advanced Extremely High Frequency (EHF) communication system with capabilities similar to the current system on a platform that can be launched on a future medium lift vehicle. The technological refinement required for that design will be pursued in an intensive investment program beginning in 1995.

Despite the decision to pursue this advanced EHF alternative, there remain questions as to what direction military satellite communications (MILSATCOM) should take in the future. Communications are currently spread among three frequency bands on as many as six satellite systems. All these systems will be due for replacement in the middle of the next decade. With affordability a key concern, the Department has initiated an intensive architecture study to determine the best mix of capabilities, including commercial alternatives, to support military satellite communications needs for the next century. The FY 1996 budget reflects a consolidated MILSATCOM strategy to reduce cost and improve operability.

Meteorological Satellite Convergence

DoD, the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA) completed a study in March 1994 that examined the feasibility of merging the DoD and NOAA operational polar-orbiting environmental satellite programs -- the Defense Meteorological Satellite Program and the Polar-orbiting Operational Environmental Satellite (POES) Program -- while capitalizing on NASA's Earth Observing System technologies. This study culminated in the President's May 5, 1994, decision to converge U.S. polar-orbiting operational environmental satellite systems. An Integrated Program Office (IPO) has been created for the planning, development, acquisition, management, technology transition, launch, and operations of the National Polar-orbiting Operational Environmental Satellite System (NPOESS). DoD is the lead agency responsible for supporting the IPO in NPOESS system acquisitions. The NPOESS program also carries out a National Performance Review objective of reducing the cost of acquiring and operating polar-orbiting environmental satellite systems, while continuing to satisfy military and civil operational requirements.

The NPOESS will consist of a three-satellite constellation. The need date for the first satellite could be as early as 2004. The preferred architectural option includes a European satellite as one of the three satellites, provided this satellite meets specified U.S. conditions, including the capability to selectively deny critical data to an adversary during crisis or war yet ensure the use of such data by U.S. and Allied military forces. A NOAA-led team which includes DoD and NASA is negotiating with the European Organization for the Exploitation of Meteorological Satellites for provision of the mid-morning satellite of the three-satellite converged constellation. DoD is working closely with NOAA and NASA to ensure NPOESS satisfies national security requirements.

SPACE SUPPORT TO THE WARFIGHTER

Over the past year, space forces have played important roles in every contingency where U.S. forces were engaged. In the former Yugoslavia, for example, multispectral imagery products provide support to U.S. forces which can be used for search and rescue. In Haiti, the UHF Follow-On and Milstar I military satellite communications systems provide operational support to U.S. forces for command and control as well as other functions.

To enhance the contributions of space forces to U.S. military operations, space forces also have been integrated into the Joint and Service exercise schedule. U.S. Space Command (USSPACECOM) components are actively engaged in supporting each combatant commander. Space systems directly supported exercises including Ulchi Focus Lens in Korea, Keen Edge in Japan, Atlantic Resolve in Europe, and Bulwark Bronze with U.S. Strategic Command and North American Aerospace Command. By fully integrating space capabilities into military operations, combatant commanders are better able to tailor their campaign planning and operations to more effectively employ available forces and achieve objectives at the least risk and cost.

To enhance the contributions of space systems to joint warfighting capabilities, USSPACECOM is proposing to establish a Joint Space and Missile Defense Warfare Center at Falcon Air Force Base, Colorado. It will coordinate the efforts of the Services with respect to space applications; integration of joint space operations into doctrine; innovation and application of joint space capabilities; and focused space support to the warfighter. DoD is also actively pursuing advanced applications of space forces through Tactical Exploitation of National Capabilities (TENCAP) programs. The Army's TENCAP program, for example, is currently providing robust, in-theater space support to operational forces. The Army will continue by fielding more advanced and mobile capabilities with direct, in-theater immediate response to the warfighter. The Air Force and Navy sensor-to-shooter efforts currently underway to integrate space system-derived information into aircraft are an additional example of ongoing activities to better exploit the force multipliers provided by space forces. These and other initiatives will improve the exploitation of space capabilities in the planning and conduct of military operations.

CONCLUSION

Space forces are essential for the successful execution of U.S. national security strategy and national military strategy. Space systems provide force multipliers which complement and enhance the capabilities of U.S. land, sea, air, and special operations forces. The organizational, operational, 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 U.S. national security objectives.

BALLISTIC MISSILE DEFENSES

INTRODUCTION

To address the security challenges posed by the proliferation of weapons of mass destruction (WMD) and the ballistic missiles used to deliver them, the Department of Defense is continuing to implement the new priorities established for ballistic missile defenses (BMD) outlined by the Bottom-Up Review (BUR). These priorities reflect the fact that the Cold War is over and the threat it posed to U.S. security has been replaced by the requirement to prepare for major regional conflicts against adversaries armed with advanced conventional and unconventional weaponry. The dangers posed by proliferation require a major emphasis on developing and rapidly deploying theater missile defenses (TMD) to protect forces operating in regional conflicts and U.S. allies, while also ensuring the ability to develop a national missile defense capability which could be deployed to respond to future threats to the United States.

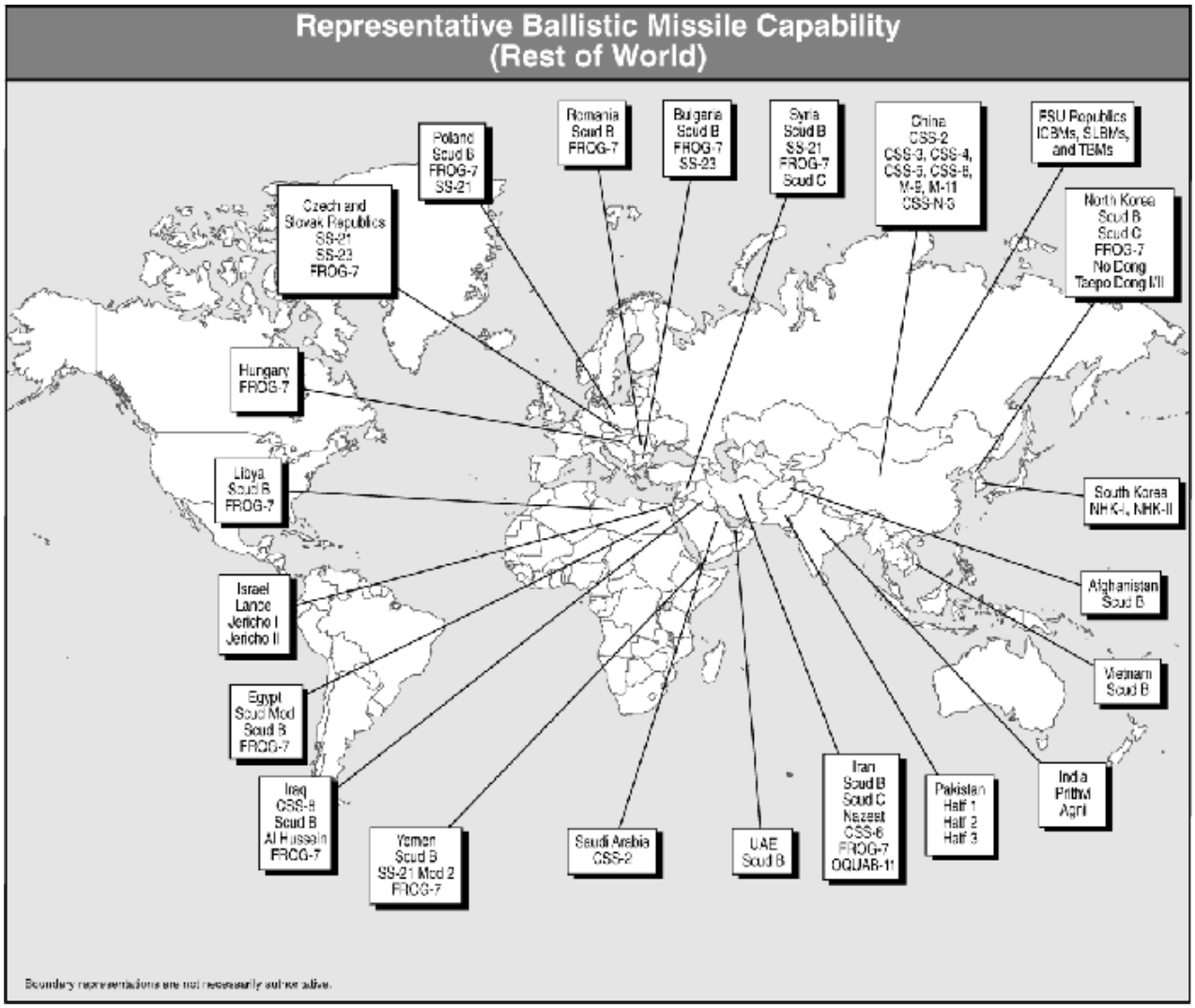
BALLISTIC MISSILE DEFENSE IN U.S. DEFENSE STRATEGY

The U.S. objectives for missile defense include protection of forward-deployed U.S. and allied forces and population centers against adversaries armed with theater ballistic missiles (TBM), and the strengthening of U.S. security relationships with allies. In addition, missile defense supports broader efforts to discourage the proliferation of ballistic missile technologies and WMD. Effective missile defense can reduce incentives for proliferators to develop, acquire, or use ballistic missiles and weapons of mass destruction. Defensive systems reduce the value of offensive missiles by destroying attacking missiles, thus helping to deny accomplishment of a belligerent's objectives. Furthermore, the ability to extend protection to allies and friends in a region can have a significant effect toward mitigating their desire to produce WMD systems as a deterrent against hostile nations and can encourage willingness to act conventionally with the United States in any conflict. Ballistic missile defenses, together with U.S. conventional and nuclear capabilities, also strengthen deterrence by dampening incentives to escalate and preserving U.S. freedom of action.

Countering Weapons of Mass Destruction

Weapons of mass destruction -- nuclear, biological, and chemical -- along with the ballistic missiles that deliver them, pose a major threat to U.S. security and that of U.S. allies and other friendly nations. Thus, a key part of the U.S. strategy is to stem the proliferation of such weapons and to develop an effective capability to deter, prevent, and defend against their use.

Currently, more than 25 countries possess or are developing nuclear, chemical, or biological weapons, and more than 15 nations have ballistic missiles. This situation is exacerbated by the continuing spread of sensitive technologies that contribute to the development and improvement of ballistic missiles. Controlling this spread is a critical part of U.S. defense strategy as ballistic missile technology is widely available and traded on an international scale. North Korea's development of two new ballistic missiles, the Taepo Dong I and II, is further indication of the growing proliferation of such weapons.



The combination of WMD with theater ballistic missiles poses a unique threat to managing future regional crises. An aggressor state may in the future seek to limit U.S. freedom of action in providing conventional military aid to an ally or friend by simply 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. Hostile states possessing theater ballistic missiles armed with WMD may be able to threaten or use these weapons in an attempt to deter or otherwise constrain U.S. ability to project military forces to meet commitments abroad and achieve national security objectives. With WMD, even small-scale theater ballistic missile threats would raise dramatically the potential costs and risks of military operations, undermining conventional superiority and threatening the credibility of U.S. regional security strategy. U.S. forces, once deployed, must have TMD capabilities to deal effectively with these threats.

Major Regional Conflicts

The focus of U.S. planning for major theater conflicts is on deterring and, if necessary, fighting and defeating aggression by potentially hostile regional powers. The threat of the use of ballistic missiles in regional conflict has grown enormously over the past two decades, and brings to the forefront the political and military value of ballistic missile defenses. Ballistic missiles have been used in six regional conflicts

since 1973 -- the most recent of which was the conflict between North and South Yemen involving Scud missiles armed with conventional warheads. Ballistic missiles are clearly becoming a common battlefield weapon. The 1988 Iran-Iraq War of the Cities, Operation Desert Storm, and the recent conflict in Yemen have demonstrated the capability of ballistic missiles to threaten military forces and civilian population centers.

Ballistic missile defenses can contribute to U.S. military strategy for major regional conflicts in a number of critical ways. During Operation Desert Storm, several important lessons were learned about the value of TMD.

- First, Iraq demonstrated that missiles armed only with conventional warheads were effective terror weapons. The Scud attacks on civilian population centers affected coalition military strategy and necessarily constrained U.S. options for employing available allied forces in other operational missions. The capability to protect 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, the Cold War concept 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 the pressures on U.S. military and political leaders to alter their campaign or war plans in a regional conflict 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 superiority during Operation Desert Storm, it was unable to effectively locate Iraq's mobile launchers and halt Scud attacks.

Giventhese realities, a U.S. missile defense capability is required to protect forward-deployed U.S. and allied forces in order for those forces to operate effectively in the face of ballistic missile threats.

FORCE STRUCTURE AND CAPABILITIES -- FOCUS ON TMD

BMD Priorities

The Department's first priority is to develop, procure, and deploy TMD systems to protect forward-deployed and expeditionary elements of the U.S. armed forces as well as friends and allies of the United States. This plan envisions the time-phased acquisition of a multi-tier defensive capability. The first phase consists of near-term improvements to existing systems using low-cost, low-risk, and quick-reaction programs, while simultaneously refining concepts of operation and tactics. The second phase expands current terminal ballistic missile defenses. This capability consists of land-based defenses to protect critical assets and to provide theater-wide protection, and sea-based capability to protect U.S. and friendly forces in coastal areas. This capability also provides improved lethality and probability of kill through the use of hit-to-kill interceptors and engagement opportunities at both lower altitudes and shorter ranges (lower-tier intercepts within the atmosphere), and at higher altitudes and longer ranges (upper tier, exo-atmospheric intercepts). In the final phase, advanced concepts for TMD will be developed. These may include the additional capability to intercept theater ballistic missiles in the boost and midcourse phases of flight.

As a secondary priority of missile defense, the National Missile Defense (NMD) technology readiness program is to provide a hedge against the emergence of a long range ballistic missile threat to the United States. While no longer an acquisition program, NMD is focused on achieving technical readiness of the elements that would comprise a system. The objective of the NMD program is to develop and maintain the option to deploy a cost effective, ground-based antiballistic missile defense capability for the United States against limited attacks of ballistic missiles. Efforts also address ways to reduce the lead time for such a contingency deployment. A key feature of the program is that as technical progress is achieved, an early contingency deployment capability becomes available against simple threats, on the path to the objective NMD capability.

The third priority is an Advanced Technology program to provide technology options for improvements to planned and deployed defenses. The program will invest in high leverage technologies that yield improved capabilities for TMD interceptors and sensors. The improvements will focus on responding to potential developments in the deployment of countermeasures on theater ballistic missiles and the use of advanced submunitions in ballistic missile warheads. The program will also take advantage of the lessons learned from operational experience.

TMD Missions

The TMD mission is composed of four pillars: attack operations; active defense; passive defense; and battle management/command, control, communications, computers, and intelligence (BM/C^4I). Of these four pillars the Ballistic Missile Defense Organization's TMD program focuses on active defense and associated BM/C^4I. Active defense can be defined as the intercept and destruction of hostile missiles during any phase of flight. BM/C^4I is the horizontal and vertical integration of TMD systems into the theater BM/C^4I architecture.

TMD -- Active Defense Programs

The BUR confirmed the need for a core theater missile defense effort consisting of the Patriot Advanced Capability Level-3 (PAC-3), the Navy Area TMD, theater high altitude area defense (THAAD), as well as research into advanced concepts programs. The TMD program is structured to put capability into the field quickly by upgrading existing TMD systems while developing more advanced TMD capability.

PATRIOT ADVANCED CAPABILITY LEVEL-3

The Patriot PAC-2 missile was used against modified Iraqi Scud missiles during the Gulf War. The Patriot Missile System is being upgraded to the PAC-3 configuration to include a new missile, remote launch, communications and computer/software improvements, and radar upgrades to enhance system performance by improving its multifunction capability; acquisition, tracking handling capability; and performance against advanced threats.

The Extended Range Interceptor (ERINT), using hit-to-kill technology, was judged to have the best performance against WMD and, as a result, was selected as the PAC-3 missile. Efforts now focus on completing the radar and remote launch enhancements to the system, completing initial work on Patriot/ERINT integration, and initiating PAC-3 missile engineering and manufacturing development.

THE AEGIS/STANDARD MISSILE BLOCK IVA

The Navy currently deploys many cruisers and a growing number of destroyers equipped with Aegis Weapons System and standard missiles for air defense operations. The Block IVA program capitalizes on

this existing infrastructure by fielding upgraded standard missiles and software modifications to the existing Aegis Weapons System to provide a sea-based TMD capability and improved performance against antiship cruise missiles. A naval TMD capability could be placed in the vicinity of a potential regional conflict in littoral regions, providing protection for land-based targets before or after hostilities break out, or before land-based defenses could be transported to the theater. The sea-based capability will also provide protection for amphibious objective areas and expeditionary forces as they are inserted ashore.

THEATER HIGH ALTITUDE AREA DEFENSE SYSTEM

The THAAD system consists of two separate but mutually supporting programs -- the THAAD weapon system and the TMD-GBR (Ground Based Radar) surveillance and fire control radar system. The THAAD system comprises the upper tier of a two-tiered, ground-based defense against TBMs. This system will provide broad surveillance and a large intercept envelope to defeat theater ballistic missile threats directed against wide areas, dispersed assets, and strategic assets such as population centers and industrial facilities. THAAD will engage at high altitudes to minimize damage caused by debris and chemical, biological, and nuclear munitions. The combination of high-altitude and long-range intercept capability provides multiple engagement (shoot-look-shoot) opportunities.

ADVANCED CONCEPTS PROGRAMS

The advanced concepts are those potential programs that complement and expand the capabilities of the core programs. Currently, three programs are being considered under advanced concepts -- Corps Surface-to-Air-Missile (SAM), Sea-based Theater-wide Defense, and Boost Phase Intercept (BPI). Corps SAM would provide an easily deployable defense for highly mobile land forces. Sea-based Theater-wide Defense would capitalize on the Aegis infrastructure to provide a capability to defeat long-range TBM threats without the need for forward basing. BPI would counter advanced threats by engaging TBMs early in flight over enemy territory.

TMD COOPERATION WITH ALLIES AND FRIENDS

As part of the broader efforts to enhance the security of U.S. and allied forces against ballistic missile strikes and to complement counterproliferation strategy, the United States is exploring opportunities for cooperation with its allies and friends in the area of TMD.

The U.S. approach to allied participation in research, development, and acquisition of ballistic missile defense has evolved as the ballistic missile defense program has changed. Cooperation started as a concerted effort on the part of the United States to consult friends and allies regarding the direction of U.S. initiatives. Consultation evolved into active participation in technology development and, most recently, cooperation has started to focus on development of interoperable theater missile defense systems. The latest stage of cooperation results from DoD giving high priority to armaments cooperation, thereby providing impetus to the process of involving allies and friends in BMD programs.

The international community increasingly recognizes the existence and growth of the threat of ballistic missile attack and, as a consequence, commitments to TMD development efforts by friends and allies have been growing. The United States has established several working groups to explore the possibility of cooperation in the area of TMD. To capitalize on the interest in TMD cooperation shown by many allies, the United States is taking an evolutionary and tailored approach to allied cooperation in order to accommodate varying national programs and plans, as well as the special capabilities of particular nations. The approach may include a menu of items such as bilateral or multilateral research and

development, improvements to current missile capabilities, off-the-shelf purchases, and more robust participation such as codevelopment and coproduction programs. All of these activities will ensure interoperability of missile defense systems while avoiding costly duplication.

In the U.S. view, cooperation in TMD, in whatever form it takes, will help strengthen security relationships with allies, enhance the counterproliferation strategy of discouraging acquisition and use of ballistic missiles and, should that fail, protect against the threats posed by such systems.

ANTI-BALLISTIC MISSILE TREATY

During the past year, the Administration has pursued an agreement providing for the succession to the USSR as parties to the Anti-Ballistic Missile (ABM) Treaty by any New Independent States and an agreement clarifying the distinction between ABM systems, which are limited by the Treaty, and non-ABM systems, which are not. These two agreements are being pursued in the Standing Consultative Commission with the participation of the likely NIS successor states as well as Russia. An agreement on succession will make clear the Treaty parties and their responsibilities. An agreement that clarifies the distinction between ABM and other ballistic missile defense systems will help to ensure the continued viability and effectiveness of the Treaty as the United States pursues development and deployment of effective TMD systems for the protection of its forces overseas, allies, and friends.

CONCLUSION

The U.S. ballistic missile defense program is directed toward the development of TMD, which is a critical component of a national security strategy that focuses on regional crises and proliferation. TMD contributes to crisis management by preserving U.S. freedom of action, dissuading regional powers from initiating or escalating conflict, and stabilizing coalitions. Effective TMD also contributes to counterproliferation by reducing the incentives for regional powers to develop or acquire WMD and ballistic missiles. TMD can protect when, despite comprehensive nonproliferation efforts, U.S. forces and allies face future opponents armed with ballistic missiles. The overall BMD program -- deploying TMD 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 while hedging against long-term threats to the United States.

THE NATIONAL GUARD AND RESERVE -- AMERICA'S FORCE IN RESERVE

INTRODUCTION

For America's Guard and Reserve, 1994 was a demanding year -- supporting operations around the globe, while managing reductions in force structure and end strength. Their many contributions this year provided strong support for the Department's increased reliance on the National Guard and Reserve to meet national security requirements in the post-Cold War era.

A FORCE SIZED AND SHAPED FOR THE POST-COLD WAR ERA

The Department of Defense is leveraging the capabilities of mission-ready Guard and Reserve forces to meet the challenges of the National Security Strategy, to control peacetime costs, and to reduce the risks associated with a smaller Total Force. A key element in restructuring this year was the Department's focus on assigning roles and missions to the Guard and Reserve -- both combat and support -- which take advantage of their traditional strengths and core competencies.

In 1994, the Army began to implement the plan to align Army roles and missions based on the Reserve component (RC) core competencies. The Army Reserve will provide the preponderance of early deploying combat support (CS) and combat service support (CSS) units at echelons above Corps level. The Army Reserve retained medical, signal, military police, and transportation structure, otherwise programmed for inactivation. The Army Guard retained artillery, aviation, mechanized infantry, armor, and special forces units, otherwise programmed for inactivation, and still remains a balanced combat, CS, and CSS force, enabling the sustained support of the various States' missions.

The Army also announced selection of the 15 enhanced readiness combat brigades in the Army National Guard to support the two nearly simultaneous major regional conflicts strategy. These brigades (seven armor or mechanized infantry, seven infantry, and one armored cavalry regiment) will be structured and resourced to be ready within 90 days of their mobilization to reinforce, augment, or backfill active forces. These brigades are receiving priority for resources, personnel, and equipment, as well as increased training support and training opportunities. They will be equipped to maintain command and control compatibility with the active forces and will be authorized peacetime personnel strength over their wartime required structure in order to ensure individual skill readiness.

The Naval Reserve (NR) has been given new capabilities and responsibilities through the assignment of five new classes of ships to the Naval Reserve Force. Although the NR decommissioned one of its two Reserve carrier air wings in FY 1995, the NR gained USS John F. Kennedy (CV-67), the first Operational Reserve Aircraft Carrier. The first of 11 Coastal Mine Hunting Ships (MHC), two Tank Landing Ships (LST), and two mine countermeasure ships will enter the Naval Reserve Force in FY 1995. The USS Inchon (MCS 12), the first Mine Control Ship, will enter the Naval Reserve in October 1995 (FY 1996). The Naval Reserve will also provide a nucleus of trained Selected Reservists to support four LSTs and five Amphibious Cargo Ships (LKA) which have been placed in a reduced operational status. More significant changes are likely as a result of the 1994 DoD study on NR roles and missions.

The Naval Air Reserve Force will continue to increase its intratheater airlift capability with delivery of additional C-130T and C-20G aircraft. To simplify command and control and reduce costs, two Reserve Force Helicopter Mine Countermeasures Squadrons will be fully integrated with their Active component

counterparts. Furthermore, aircraft used for surveillance, anti-submarine warfare, and logistics are receiving significant enhancement and upgrades to their mission equipment.

To affirm and strengthen the Marine Corps commitment to the seamless integration of the active and Reserve components into one Total Force Marine Corps, the Commandant designated the Commander, Marine Forces Reserve, to make it consistent with the Commanders, Marine Forces Atlantic and Marine Forces Pacific. This change is more than symbolic and refines the organization and structure to enhance warfighting mission capabilities.

As the Air Force continued its drawdown during 1994, several Air National Guard and Air Force Reserve fighter squadrons were restructured or converted to other aircraft. While the Air National Guard and Air Force Reserve continued to modernize their forces, these changes have not entailed major force structure modification. Most F-16 fighter units are now flying the F-16C/D series, and C-130B airlift units have converted to C-130 E/H models. A portion of the aerial refueling tanker force is quickly transitioning to KC-135R models.

Consistent with the Department's policy to take advantage of Guard and Reserve competencies, four B-1B bombers were reassigned to the Air National Guard and eight B-52H aircraft were reassigned to the Air Force Reserve. Further, an Air National Guard major general was assigned as commander of First Air Force, which is responsible for air defense of the United States.

National Guard and Reserve Special Operations Forces supported every major U.S. military operation in 1994. Their specialized skills, as well as regional expertise, have identified them as valuable participants in operations which require sensitivity to local and foreign customs and economy-of-force efforts. Typically these operations involved civil-military programs, humanitarian assistance, and disaster relief.

During 1994, developments in the base realignment and closure (BRAC) process, and in Military Construction (MILCON), also reflected the altered infrastructure requirements of the post-Cold War era. The Assistant Secretary of Defense for Reserve Affairs is now a member of the Secretary of Defense's Base Closure Review Group and -- with guidance from the Secretary of Defense -- Reserve component concerns and factors will be included in the upcoming debates and formulation of BRAC plans. Guard and Reserve units located on closing bases will either remain in small enclaves or be relocated to nearby military installations or other suitable locations.

The Reserve components were busy in 1994 designing and preparing award of $744 million worth of MILCON. This amount comprised 321 projects which provide facilities for new missions and rehabilitation/upgrade of deteriorated and obsolete facilities. In FY 1995, the Reserve components will design and execute awards totaling $574 million for 208 projects.

ACCESSIBLE AND MISSION READY FOR LAND, SEA, AND AIR OPERATIONS

Mission Readiness: Improved Resourcing for People, Equipment, and Training

The term mission readiness applies to the approach that the Department is taking to ensure that its scarce resources are allocated appropriately. It means that each Active or Reserve component unit should be resourced to execute its mission when needed, and only early deploying units need be fully ready immediately. Mission readiness requires adroit management of people, equipment, and training.

PEOPLE

In 1994, the Reserve components' end strength was reduced by about 5 percent overall. For those members of the Guard and Reserve who will be leaving the force, the Department will continue to provide transition benefits to ease their departure. For those whose units are being inactivated, the Department is committed to reassigning or retraining these valuable people, where possible.

With greater reliance on reservists, the Department must provide better support for their families. The Department has completed a comprehensive study on how best it can support reservists, their families, and their employers. Key components of this study include how Reserve component families can be helped to function effectively during a crisis or contingency, how to improve employer support to the Guard and Reserve, and how to protect reservists against severe income loss during a call-up.

At the start of the All-Volunteer Force, the DoD established the National Committee for Employer Support of the Guard and Reserve (NCESGR) to promote employer/community understanding and support of the Reserve components. NCESGR is expanding its programs to ensure reservists and employers continue to receive the support they need.

Two legislative changes adopted in 1994 will contribute to personnel readiness:

- Uniformed Services Employment and Reemployment Rights Act of 1994 (USERRA). USERRA will improve employment and reemployment rights of veterans and reservists. USERRA is especially important to members of the National Guard and Reserve. It updates and clarifies the rights and obligations of veterans, reservists, and employers and provides that the federal government should be a model employer under the Act. DoD is taking the necessary steps to implement USERRA.
- Reserve Officer Personnel Management Act (ROPMA). ROPMA provides the Department with an up-to-date statutory framework for the effective management of over a quarter of a million reserve officers. The effective date for ROPMA implementation is October 1, 1996; however, this date could be accelerated. Implementation of ROPMA will assure visible and equitable career opportunities for reserve officers.

EQUIPMENT

The Department's goal is to provide Reserve component units with modern, compatible equipment to enable them to do their job side-by-side with Active forces and coalition partners. Since redistributed/cascaded equipment is not a total answer, this requires a sustained level of investment in new RC equipment, particularly for the Reserve components of the Army. In FY 1994, $1.8 billion in new RC equipment was programmed by the Services, and the RC components received directly $1.2 billion for new equipment.

In FY 1994, the Reserve components took possession of a considerable amount of equipment due to the drawdown in Europe, modernization of Active component equipment, and the overall reduction in forces. The large quantities of combat equipment transferred to fill Reserve unit shortages helped tremendously; however, problems remain in CS and CSS units of the Army's Reserve components. DoD is addressing one of these problems with an extended service program for 2 1/2 ton trucks as an alternate to procuring new trucks. This solution extends the useful life of the fleet and reduces maintenance costs. This is the first of many solutions DoD is considering to aid in increasing Reserve component readiness.

TRAINING

Training is the third key component of mission readiness. Cost-effective training to promote effective Reserve component integration into Total Force missions means increasing opportunities for joint training missions with the Active forces and making good use of all the tools available -- especially technology.

A major goal for the coming year is to establish training approaches which will involve Reserve components in more peacetime operational missions, and so increase reserve readiness as a result of direct involvement in peacetime operations. This shift in training philosophy constitutes a tremendous opportunity for the Reserve components to support the Commanders in Chief (CINCs) in day-to-day missions, as well as operations other than war. The Secretary of Defense has asked the CINCs to identify how this should be done.

Improved Access to National Guard and Reserve Units and Individuals

LEGISLATIVE DEVELOPMENTS

The U.S. National Military Strategy requires access to the National Guard and Reserve to augment active forces for operational missions. In April 1994, the Secretary of Defense sent Congress a report with a series of recommendations to improve accessibility to National Guard and Reserve units and individuals. The report recognized the need for early and extended RC participation in both major regional conflicts and peacetime operations. The Department proposed a legislative change to expand the duration of activation, authorize the Secretary of Defense to order up to 25,000 members of the Selected Reserve to active duty to gain early access to critically needed capabilities, and change the Presidential Selected Reserve call-up authority from 90 days with the possibility of a 90 day extension to 180 plus 180 days. Other recommendations called for expanded RC access in domestic emergencies; taking actions to protect reservists, their families, and their employers financially; and expanding the use of volunteers -- units and individuals.

Congress did not support the proposal for limited Secretary of Defense call-up authority, but did increase the duration of call-up of the Reserves from 90 days to a single period of up to 270 days. This provides an initial period of activation of sufficient duration to provide for any needed predeployment training.

IMPROVING PEACETIME ACCESS TO GUARD AND RESERVE

The Department is looking for ways to increase the use of the Guard and Reserves in peacetime. A key issue is existing impediments to Reserve component utilization. Target areas being studied include:

- DoD and Service policies on use of Reserve components for operational mission support.
- Processes for identifying and submitting requirements for reserve forces.
- Funding priorities for reserve operational work.
- Current training and evaluation processes.

USE OF VOLUNTEERS

In the first weeks of Operation Desert Shield, about ten thousand National Guard and Reserve members served in a volunteer status. Since that time, thousands more have volunteered for operations around the world. While involuntary call-up authority was used by some of the Military Services for Operation Uphold Democracy in Haiti, the Air Force satisfied all requirements without Presidential Selected Reserve Call-up (PSRC), with over 95 percent of the Reserve component members supporting the operation in volunteer status. This spirit of volunteerism must be nurtured and made even more viable. Steps DoD has taken to accomplish this include:

- A new DoD directive with a policy that requires maximum consideration for use of RC volunteers.
- A new study by the Institute for Defense Analyses to determine how access to RC capabilities can be expanded through greater reliance on volunteers
- A new plan to fund expanded peacetime use of volunteer units.

The Department of Defense experienced a year of unprecedented requirements for peacekeeping operations in Bosnia-Herzegovina, Turkey, Iraq, Kuwait, Somalia, Rwanda, and Haiti. Volunteer Reservists were used extensively in all those operations.

Improved Protection for Reservists, Their Families, and Their Employers

Greater use of Reserve components to support war and peacetime operations has its problems. Many reservists mobilized for the Persian Gulf Conflict suffered major financial hardships from their activation -- for example, 45 percent of activated reserve officers and 55 percent of enlisted members reported income loss. Specifically, the problems were threefold: active duty military compensation fell below their civilian income (including reserve pay); additional family expenses associated with military activation placed a burden on reservists; and some reservists experienced continuing financial losses after return to civilian life due to neglected businesses or professional practices. The Department of Defense has had a long-standing concern about the impact on small businesses caused by prolonged absences of employee-reservists. The Department is currently reviewing proposals to address these problems.

A FORCE ADDING VALUE TO AMERICA IN PEACETIME

The Guard and Reserve continued to add value to America by responding to domestic emergencies, assisting in the Department's counterdrug programs, and participating in a variety of civil-military pilot programs. DoD is also proposing a strategy for expanded use of Guard and Reserve forces to meet the CINCs' operational and peacetime requirements. All of these contributions are discussed below.

Expanded Peacetime Contribution and Support

As their roles and missions expand, the RCs have become much more than a force held in readiness for wartime use. The Department has developed a strategy which expands RC peacetime contribution and support:

- Active component forces bear primary responsibility for the initial response to peace enforcement operations overseas, with a few exceptions (e.g., reserve strategic airlift personnel and aircraft, and some specialized RC assets, especially CSS, psychological operations, and civil affairs units).
- The Reserve components will take on larger roles in these missions -- through the participation of individual reserve volunteers with key military skills and through participation of reserve units on a rotational basis, relieving Active component forces deployed abroad for extended periods.

Some examples of the peacetime contribution in 1994 are outlined below:

- The Army National Guard began training a volunteer, all-component peacekeeping battalion for the Multinational Force and Observers (MFO) in the Sinai desert to deploy in 1995. Army Guard units supported retrograde operations in Kuwait and Somalia, including shrink-wrapping of Army helicopters and training U.N. soldiers on the M60A3 tank and the AH-1S helicopter. They provided military police (MP) and CSS deployments to Panama and humanitarian and civic action missions in Latin America, including emergency relief operations, as well as three MP

companies to backfill active units deployed to Haiti. Army National Guard soldiers served on military liaison and traveling contact teams in Central and Eastern European countries, providing assistance in areas such as military support to civilian authorities, medical services, contract law, personnel, and response to nuclear disasters through the European Command's Military-to-Military Contact Program and the State Partnership Program. Initiated by the National Guard Bureau, this program links an emerging democratic nation with the National Guard and Reserves within a state to establish long-term institutional people-to-people programs to cement sustained partnerships.

- Army Reserve volunteers manned embarkation ports and provided backfill at active Army installations in many deployments. Even before the PSRC authority was approved for Operation Uphold Democracy, seven civil affairs units, three psychological operations units, and two engineer units answered the call to help in the operation. Army Reservists served as members and team chiefs for Military Liaison Teams to Albania, Belarus, Bulgaria, Estonia, the Czech Republic, Poland, and other former Soviet-bloc countries. Others were part of Traveling Contact Teams, sharing their one-of-a-kind expertise in medicine, engineering, reserve force structure, and civil affairs, with an emphasis on refugee operations, emergency planning, and disaster relief. Army Reserve soldiers trained for participation in the Sinai MFO, and more than 5,000 Army Reservists took part in Retrograde Europe (RETROEUR) operations, moving equipment back to the United States for redistribution to other Army units.
- The Naval Reserve mobilized in direct support of Operation Uphold Democracy in Haiti and numerous volunteers participated in Operations Able Vigil in the Florida Straits off Cuba, Restore Hope in Rwanda, and Provide Promise in Bosnia. Naval Reserve personnel supported fleet operations in the Persian Gulf; provided air terminal support in Sigonella, Italy; and deployed in support of Operation Southern Watch in Iraq. Thousands of flight hours and hundreds of steaming days were logged in support of counternarcotics operations in the Caribbean and Pacific theaters.
- Marine Corps Reserve volunteers supported Operations Provide Promise, Restore Hope, Vigilant Warrior in Southwest Asia, Uphold Democracy, and counterdrug operations from August to October 1994. In addition, Marine Corps Reservists participated in numerous active force exercises alongside their active counterparts throughout FY 1994. Of special note were the 450 citizen-Marine Reservists who volunteered in support of Operation Sea Signal in Cuba. They furnished three separate increments of provisional rifle companies for over 90 days duration, providing security to more than 44,000 plus migrants held at Guantanamo Bay, Cuba. In addition, Reservists provided CONUS equipment maintenance support for the units deployed for Sea Signal.
- The Air National Guard provided airlift, refueling, and fighter units in support of operational missions around the globe. The most visible actions were Operations Deny Flight and Provide Promise in Bosnia and Sarajevo, Operation Southern Watch in the no-fly zone over Iraq, and Operation Support Hope to aid victims of the Rwandan civil war. Despite the high operational tempo involved, and significant contributions made, all Air National Guard participation was in a volunteer status.
- The Air Force Reserve entered its third year of support to Operations Provide Promise and Deny Flight by flying airland/airdrop missions over Bosnia. At the same time, Air Force Reserve A-10 and F-16 fighter aircraft replaced active component fighters at Aviano Air Base in Italy. Elsewhere, Air Force Reserve aircraft and crews replaced Active component squadrons providing fighter coverage in the no-fly zones over Iraq and provided search and rescue support in the Middle East and North Atlantic. Additionally, Air Force Reserve C-5, C-141, and C-130 airlift and KC-135 and K-10 tanker units flew over 34,000 flying hours, carried over 108,000 passengers, and hauled over 205 million pounds of cargo.

Prompt Response to Domestic Emergencies

When disaster strikes, the Reserve components typically provide vital capability in the areas of security, search and rescue, water supply, emergency communications, medical services, emergency shelter, and transportation. During 1994, the Guard -- in some cases together with Reserve and Active units -- responded to domestic emergencies across the nation. Increased coordination between the Federal Emergency Management Agency (FEMA) and the Active and Reserve components has improved the Department's support in response to domestic emergencies.

The Army and Air National Guard, Air Force Reserve, and the Marine Corps Reserve battled wildfires in several western states last summer. In Washington State alone, more than 2,200 Army and Air National Guard members performed 36,000 workdays to help civilian fire fighting efforts. By the end of August 1994, Air National Guard and Air Force Reserve C-130 transports modified for aerial fire fighting dropped more than 12 million pounds of retardant on fires in Utah, Idaho, and Montana.

Flooding in Georgia kept National Guard units and Marine Corps Reservists especially busy where high water from the Flint River took 31 lives and caused over $200 million in damage. More than 5,000 National Guard members responded. Assistance also included tornado relief in the Carolinas, Virginia, and Wisconsin and earthquake relief in California.

Continued Support to Counterdrug Programs

The Army National Guard performed more than 4,400 counternarcotics operations in every state, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. During one operation, a New Jersey Guard member uncovered a cache of cocaine with a street value of over $1 billion, the largest New Jersey drug bust ever.

The Naval Reserve is also heavily involved in the Navy's fully-integrated operational support to the Navy's counternarcotics effort. Naval Reserve ships provide over 16 percent of the total surface effort, while their aviation squadrons provide about 13 percent of the total air effort. A national Naval Reserve initiative, Campaign Drug Free, complements existing drug education efforts, with Naval Reservists visiting schools as role models to approximately 40,000 young people, emphasizing the benefits of living drug free.

The Marine Corps Reserve was an integral part of the Marine Corps' Campaign Drug Free, making 527 presentations to more than 47,000 students, with the message -- "You don't need drugs to be happy, accepted, and successful."

In the 54 states and territories, over 1,000 Air National Guard volunteers supported the national counterdrug strategy by providing daily support to local, state, and federal law enforcement agencies. Air National Guard personnel also manned radar sites in South America, flew interceptor aircraft used to identify drug smuggling aircraft, and participated in drug demand reduction programs in schools throughout the nation.

A special program performed by the Band of the Air Force Reserve promoted a drug-free lifestyle by encouraging school-age children to develop the inner strength to say no to drugs. The program has reached tens of thousands from New York to Florida and has been commended for its effectiveness by local school boards, law enforcement officials, parents, and civic leaders.

Expanded Civil-Military Cooperation Programs

The need to execute simultaneous military conflicts around the globe, amid declining resources, requires innovation. Combining this need with several urgent domestic challenges has the potential to provide realistic training opportunities for the Guard and Reserve while improving the quality of life in local communities. In concert with Congress and State Governors, the Department is developing pilot programs that will enhance military readiness through focusing Guard and Reserve training on critical needs here at home.

There are medical pilot programs in 14 states, job training and youth programs in 26 states, and various engineering/infrastructure projects around the country. In FY 1994, Congress provided $70 million for National Guard and Reserve Civil-Military Pilot Programs.

In 1994 civil-military job training and youth programs included:

- ChalleNGe -- a 22-week residential education development program for 16 to 18 year-old unemployed, drug-free high school drop-outs, free from serious involvement with the law.
- Starbase -- a nonresidential program exposing K to 12 grade students and teachers to real-world applications of math/science through learning, simulations, and experiments in aviation/space-related fields.

Health care pilot programs included:

- GuardCare and CareForce -- providing assistance to medically underserved communities while providing hands-on training with wartime assets targeted at qualitatively enhancing medical readiness for deployment.
- Medical Readiness Learning Initiative (MERLIN) -- a distance learning, information highway program which emphasizes medical readiness skills for wartime and humanitarian deployments, as well as for meeting training requirements necessary for military medical personnel to train and work in the civilian medical community.
- Indian Health Service (IHS) Cooperative Programs -- a deployed medical facility will provide hands-on training and experience to reserve medical personnel while supporting thousands of Native American patients in Winslow, Arizona. Additionally, broader IHS access to excess DoD medical equipment, supplies, and transportation resources promises improved support of the Native American community

Engineering/infrastructure programs included:

- REEF-EX -- Reservists in concert with the Defense Logistics Agency and State agencies construct artificial reefs in coastal waters using surplus tanks. This training provides mobilization opportunities in a peacetime environment, as well as environmental and economic benefit, while also disposing of surplus tanks. Construction of artificial reefs is beneficial to the coastal states.
- Repair of Boy Scout camps around the country, construction of playing fields for youth recreational sports, renovation of museums and police weapons ranges, assistance to the Special Olympics, repair and upgrade of roads on public lands, construction of safety pits for elementary school playgrounds, and other community-based projects.

For FY 1995, Congress appropriated $80 million for these programs, including $8 million for military pay and allowances, and $5 million for GuardCare.

CONCLUSION

For the Reserve components, 1994 was a year of unprecedented challenge and accomplishment. The Department worked hard to size and shape the RC forces -- combat and support -- to fit the requirements of a new military strategy for a post-Cold War world. These forces are now being resourced to be mission ready and accessible over a far wider range of circumstances than was contemplated during the Cold War. An expanded part of their mission is to add value to America with peacetime support to active forces, counterdrug programs, and civil-military programs helping to rebuild America.

In the future, reservists will play a larger role and America must remember the actual and potential sacrifices reservists make to serve the nation. The American people must be ready to support their reservists, their families, and their employers in the greater role they will all play in America's defense.

COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE

INTRODUCTION

Command, control, communications, computers, and intelligence (C^4I) systems are a key element in facing the broad range of missions and operations envisioned for a post-Cold War future. C^4I 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 (C^2) foundation for optimal effectiveness of the forces. However, C^4I now includes other areas such as counterintelligence, Corporate Information Management (CIM), and information warfare.

Providing the C^4I capabilities needed to meet mission requirements of the future cannot be achieved merely by executing programs within the functional stovepipes of C^2, intelligence and counterintelligence, and information management. The Department of Defense must attain information superiority through successful C^4I that provides an information advantage in all DoD operations. Accordingly, the overarching C^4I goal is to establish and maintain information superiority in support of the National Security Strategy of the United States. To fulfill this goal, the Department must:

- Provide the secure information capabilities needed by warfighters and other command authorities to effectively and successfully prosecute any mission.
- Enable the commanders of military forces and the managers of support activities to achieve the highest effectiveness, agility, and efficiency in their operations through the effective use of information.
- Assure a global capability to share and exchange information, and to provide required information in sufficient depth, security, clarity, and timeliness for decisionmakers to arrive at informed decisions.
- Ensure that quality, timely intelligence and counterintelligence support the operational needs of DoD and national-level decisionmakers.
- Continuously re-evaluate security practices and costs and apply appropriate risk management wherever possible.
- Forge a partnership with industry, allies, and coalition partners to define, nurture, promote, and exploit C^4I concepts and technologies to meet defense requirements.

COMMAND, CONTROL, AND COMMUNICATIONS

Command and Control

The central focus of C^2 is on the decisionmaker. Decisionmakers operate within a framework of established doctrine, strategies, tactics, and procedures and are supported by an array of C^2 systems. C^2 systems provide civilian decisionmakers and military commanders with the facilities, sensors, and equipment necessary for managing strategic, conventional, and special operations forces. C^2 systems associated with the various strategic and conventional forces are an integral part of the defense structure and contribute to both deterrence and warfighting capability.

The strategic C^2 systems developed and maintained over the past 40 years have been a key ingredient in sustaining nuclear deterrence. Consistent with a post-Cold War era, DoD is continuing to restructure,

consolidate, and downsize strategic C^2 assets to provide effective C^2 of the nuclear forces while achieving significant cost savings and manpower reductions.

Given the emphasis on strengthening the Department's ability to rapidly respond to regional crises, effective theater and tactical C^2 capabilities are extremely critical, especially as the size of the force structure decreases. In support of this objective, DoD is continuing to acquire and improve theater and tactical C^2 systems. For example, the Airborne Warning and Control System (AWACS) is continuing to be improved in the areas of radar range and reliability, identification, communications, and navigation to help ensure that this vital platform will be fully responsive to future needs.

Another example is the Navstar Global Positioning System (GPS). GPS is a space-based positioning and navigation system designed to provide worldwide, all weather, passive, three-dimensional position, velocity, and timing data to a variety of U.S. and allied military users. GPS has continued its rapid pace toward broad use and acceptance as a national positioning, navigation, and timing utility. Initial Operational Capability for civilian GPS applications was announced in December 1993, based upon the sustainable availability of the civil GPS Standard Positioning Service. In March 1994, the twenty-fourth production satellite was placed in orbit, completing the operational GPS constellation. Following complete system testing for military functionality, GPS Full Operational Capability is planned for early 1995. However, DoD is concerned that certain civil augmentations to GPS accuracy, proposed by the Department of Transportation (DOT), may pose a national security risk, and DoD is working with DOT through jointly agreed interdepartmental processes to seek a mutually acceptable solution to the issues.

Current and future operations will be joint and likely involve coalition partners. Accordingly, joint interoperability and integration must be achieved on the battlefield to provide significantly improved joint service and multinational operations. To this end, DoD is an active participant in the North Atlantic Treaty Organization's (NATO's) command, control, and communications (C^3) restructuring process in an effort to ensure that the resulting NATO C^3 organizational structure is both effective and efficient. The Department recognizes the need for a more integrated, better coordinated, and more streamlined C^3 structure in NATO and is striving to achieve that end while ensuring that significant resource savings result. In keeping with the President's Partnership for Peace initiative in NATO, the Department is also actively participating in meetings and workshops with NATO's cooperation partners and engaging in discussions on interoperability issues and processes. The Department is actively preparing for operations with nontraditional partners as well.

Military commanders must be able to synchronize and integrate high-tempo operations anywhere in the world. As a result, global end-to-end information exchange among U.S. and allied forces is a critical mission capability and force multiplier for worldwide readiness, mobility, responsiveness, and operations. This information exchange is provided by the Global Command and Control System (GCCS) which responds to the warfighter's need for a fused picture of the battlespace. Initial versions of the GCCS are currently being fielded, and the current World Wide Military Command and Control System (WWMCCS) will be cut over to the GCCS configuration by September 1995.

The Defense Information Infrastructure (DII) will provide a global information technology infrastructure which emphasizes interoperability, efficiency, and end-to-end user services. The DII provides information transfer and processing resources, including information and data storage, manipulation, retrieval, and display. It is the shared or interconnected system of computers, communications, data, applications, security, people, training, and other support structure serving DoD's local and worldwide information needs. The DII connects DoD mission support, C^2, and intelligence computers and users through voice, data imagery, video, and multimedia services and provides information processing and value-added services to subscribers over the Defense Information System Network (DISN).

Communications

DISN is comprised of information services and long-haul transfer systems. Information services provide value-added service to the user or interface with user-owned equipment. Examples are secure and unsecure voice, data, electronic mail, video teleconferencing, imagery, or directory services. Long-haul transfer systems provide the infrastructure that connects DoD locations around the world. The current DISN program is being implemented in stages with the initial phase being the DISN Near Term which is an effort to collapse numerous data networks into a single system. DISN mid and far terms will evolve toward a fully integrated multimedia system that provides essential communications to the warfighter.

The Department has also embarked upon implementation of a global business quality electronic mail system, called the Defense Message System (DMS), that will replace the existing archaic Automatic Digital Network message system. DMS will provide high grades of service while providing the functionality of leading edge E-mail systems and will service the deployed warfighter, theater commanders, and individual messaging needs. This initiative is a landmark effort of interagency and industry coordination and cooperation and will foster development of an enhanced DII/National Information Infrastructure (NII) and Global Infrastructure consistent with the Administration's objectives.

A key element in supporting an integrated information infrastructure is satellite communications (SATCOM). SATCOM systems will continue to provide important capabilities in support of conventional, strategic, and nuclear C^2 and are becoming increasingly important in communications for deployed tactical forces. SATCOM systems now in operation or development exploit all areas of the radio-frequency spectrum from Ultra High Frequency (UHF) through Extremely High Frequency (EHF). The UHF Follow-On (UFO) system in the UHF band, the Defense Satellite Communications System (DSCS) operating in the Super High Frequency (SHF) band, and the Milstar system in the EHF band will support military needs into the next decade. Even so, the Department is investigating a variety of options for the replacement of these individual systems during the next century. These options include both national and international cooperative efforts, advanced EHF technology, and increased reliance on commercial SATCOM systems where cost effective. The Standardized Tactical Entry Point (STEP) initiative will standardize the services available at all of the DSCS earth terminals thereby reducing the time to re-tool communication suites when moving from one operating area to another.

A mix of both commercial and defense specific capabilities is advantageous because it remains responsive to DoD's continuing peacetime communications requirements while allowing for a surge in capacity to meet wartime needs. The results of the Commercial Satellite Communications Initiative studies demonstrate that DoD can benefit from an increased role for commercial SATCOM in support of a wide range of C^3 and intelligence missions. As a result, the Department has initiated an aggressive program to implement a commercial SATCOM program based on industry's recommendations and congressional direction. There are a number of new pilot projects that will be implemented within the next two years to effectively provide new commercial services for the Department. DoD has also issued a policy for the use of commercial SATCOM services which will guide the future commercial investment strategy of the defense agencies and the Services without sacrificing critical military connectivity requirements.

The Department is also continuing to enhance tactical communications to support combat forces and the Joint Task Force Commander. Tactical communications systems provide military commanders with the communications equipment necessary for managing conventional forces. The objective of tactical communications is to ensure secure, survivable, and interoperable systems for joint and combined operations. In support of this objective, DoD is continuing to acquire new tactical communications systems such as the Single Channel Ground and Airborne Radio System (SINCGARS). With the approval of full rate production by a second source, production of SINCGARS is continuing with monthly

production exceeding 2,300 radios. For systems already fielded, preplanned product improvements and system enhancements like those being made to the SINCGARS, Mobile Subscriber Equipment, and TRI-TAC (Tri-Service Tactical) equipment will ensure that these systems continue to provide needed interoperability and capacity to support Joint Task Force Commanders.

Information Systems Security

Virtually all DoD activities depend upon reliable telecommunications and computing support. However, growing DoD dependence on an unprotected information infrastructure to provide this support creates vulnerabilities and operational readiness risks. The February 1994 report of the Joint Security Commission highlighted these risks and stated that the security of information systems and networks is the major security challenge of this decade and possibly the next century.

Correction of the security deficiencies identified in the Department's information technology infrastructure will require a major, sustained effort among DoD, other government departments and agencies, and industry to:

- Identify, develop, and deploy protective security technologies for the DII.
- Define and implement effective security management processes.
- Develop, deploy, and operate effective attack/intrusion detection systems.
- Ensure the design philosophy for the DII reflects the need for and includes adequate protection from a dedicated attack.
- Implement an operational capability to react to attacks upon the DII through the reallocation and/or reconstitution of information processing capabilities.
- Improve information systems security (INFOSEC) training and equipping of personnel responsible for the operation and use of DoD information systems.

To achieve the envisioned results, the Department has an INFOSEC strategy directed toward protecting the confidentiality, availability, integrity, and authenticity of national security information produced and exchanged electronically. In order to keep pace with the rapid technological advances in information technologies, DoD must guide the development of security technologies by transferring security expertise to industry to ensure the integration of security functionality into evolving COTS products and services. This will require stronger partnerships among defense components and other government departments and agencies to focus government funded INFOSEC research and development on seeding technologies in the COTS market and to develop government and commercial standards to promote interoperability and consistency.

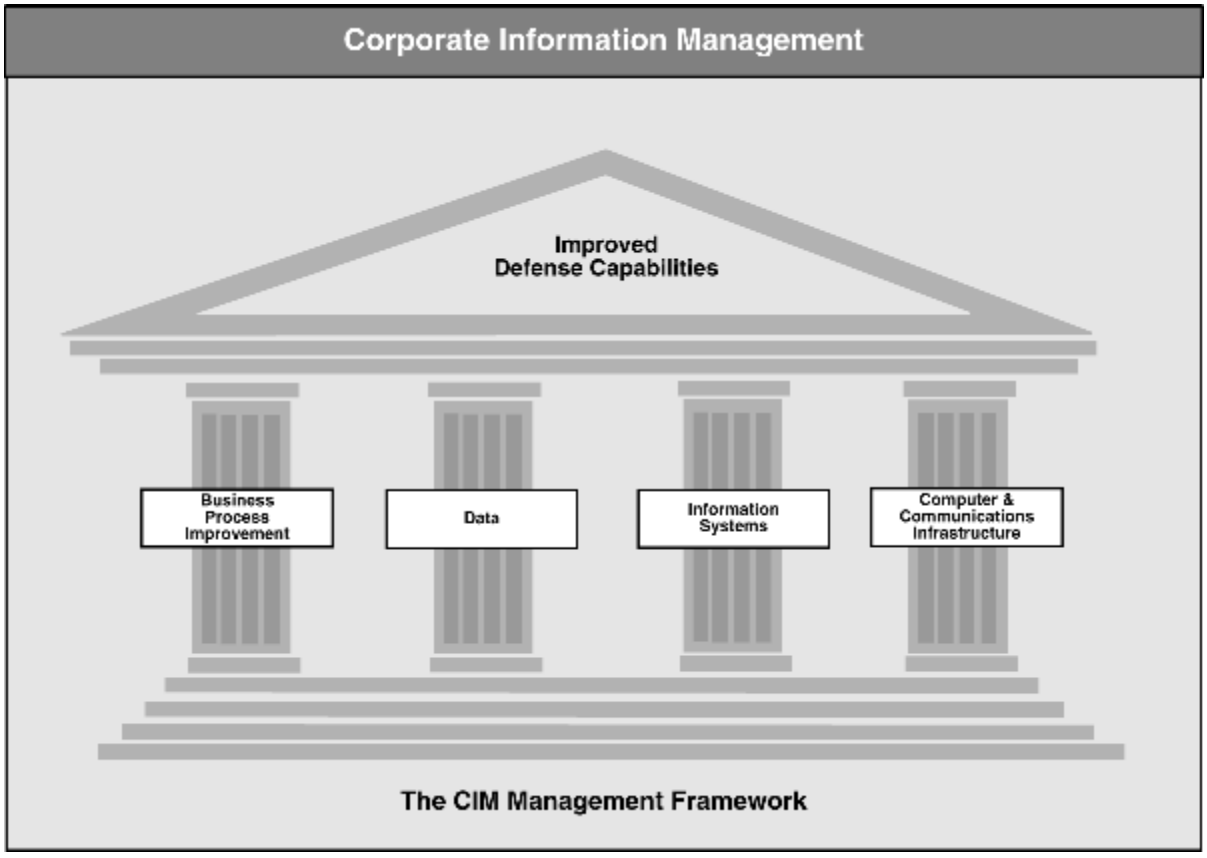
Additionally, the Department will champion the creation of sound INFOSEC policies mandating adequate protection for sensitive as well as classified information within the national security community and in national information technology policy venues. This will require continued participation in the Administration's National Information Infrastructure Task Force and in carrying out the security recommendations of the National Performance Review's information technology report. The expectation is that the results of the efforts to develop the technologies, services, products, and mechanisms to meet the needs of the DII will also be adaptable to NII applications. DoD is also working with the INFOSEC user community to better understand security requirements, to improve support in implementing security solutions via an effective defense information systems security program, and in partnership with the National Institute for Standards and Technology (NIST) and the General Services Administration, to provide INFOSEC implementation support to the civil agency community.

CORPORATE INFORMATION MANAGEMENT

In DoD, CIM is a strategic, collaborative management initiative to guide the evolution of the DoD enterprise and capture the benefits of the information revolution. It represents a partnership of functional

and technical management to achieve a combination of improved business processes and effective application of information technology across the functional areas of DoD.

The management structure of CIM has four pillars that support improved defense capabilities: (1) common information systems, (2) shared, standard data, (3) reengineered processes, and (4) a computer and communications infrastructure. Enterprise Integration provides the implementing strategies, processes, and coordination of actions needed to put these pillars in place across the Department. This is shown in the following chart.



Business Process Improvement

Business Process Improvement, or BPI, has long been the cornerstone element of the CIM initiative. Since BPI is a methodology for bringing dramatic change to the Department's processes, organizations, and culture, it has become the primary enabler of the National Performance Review and government reinvention. Under the leadership of the Vice President, these initiatives are founded on the principle of identifying and satisfying customer requirements and have as their objective the creation of a government that works better and costs less. BPI gives managers a set of tools and techniques that enable them to do this.

Because the tools and techniques of BPI can be used to analyze and improve virtually any kind of process or activity, BPI is being applied throughout the Department. The several hundred BPI efforts that have been completed or are underway address the full range of DoD activities. These include support activities such as personnel management, medical logistics, procurement, and contract management, as well as activities more directly associated with military operations, such as joint planning, combat developments, fire support, intelligence, and C^2.

To capitalize on the natural linkages between government reinvention and BPI, DoD has forged a partnership between the BPI program and the Defense Performance Review office. Through this partnership, managers of reinvention labs will be introduced to the full range of BPI tools and techniques and will thus be better equipped to achieve the dramatic improvements in performance that the reinvention effort envisions.

Significant improvements in DoD's effectiveness and efficiency can and have been achieved through reengineering individual functional activities, and this work will continue. To complement and build upon these efforts, DoD is giving increased emphasis to taking a macro or enterprise-wide view of its functions and activities. Enterprise Integration, especially in an organization as large and as complex as DoD, is a major challenge, but one that promises to bring dramatic improvement in the way DoD carries out its missions.

Data

DoD Data Administration has progressed significantly. Major emphasis moved from the development of procedures to establishment of a common vocabulary for the Department. The Department approved over 1,000 data elements and identified several hundred data element candidates. These data standards are all part of the DoD Enterprise Data Model which is evolving rapidly. A DoD Starter Set of data elements was also produced which is comprised of existing data standards that are to be used to meet immediate data requirements when a data standard does not exist. The functional communities within the Department have also made strides in developing data models within their own areas which are then being integrated into the DoD Enterprise Data Model. Also seven reverse engineering projects were initiated to produce standard data in some cross-functional systems.

Information about DoD data is maintained in the Defense Data Repository System (DDRS). It also provides the electronic approval process for the data standards. The DDRS has been moved to a larger computer and undergone two software upgrades to improve support to a growing user population. Also, investigation has continued for a commercial product which can be purchased to satisfy the majority of DoD data repository requirements.

Besides the work being done to develop procedures and guidelines on how to achieve high quality data, extensive work is being done in the functional areas to improve the quality of data through business process reengineering projects, the selection of migration systems, and the development of data migration plans. In addition, a data quality engineering tool has been prototyped.

Information Systems

Each functional area has been tasked with determining their standard information systems and eliminating legacy systems. This includes all defense areas, including administration, finance, logistics, personnel, health, C^2, and intelligence. To date, the Department has identified 1,662 information applications, of which 188 have been selected by the functional communities as migration applications, and 1,185 having migration plans. These totals represent approximately 80 percent of the mission support and intelligence functional activities.

In 1994, the Department began a concentrated effort to improve the management of software for both weapons and information systems across DoD. Specifically, the Department has taken action to implement the recommendations of the Defense Science Board's June 1994 study, Acquiring Defense Software Commercially, along with other actions aimed at enhancing the Department's ability to acquire and deliver software that meets or exceeds user requirements and expectations. These efforts encompass

all aspects of software management from acquisition and development through implementation, operation, migration, termination, or replacement.

The Department has also established a Software Management Review Board to oversee the efforts of a series of Process Action Teams specializing in specific subject areas such as Software Education and Software Acquisition Best Practices. These teams provide strategies, plans, and process improvements necessary to implement the Defense Science Board study.

DoD's software management improvement actions are intended to consolidate the various activities now underway across the Department. These include the recommendations of the Defense Science Board study, the multitude of existing Service and agency initiatives and programs, and new management improvement initiatives resulting from subject area assessments. It is expected that as a result of this initiative the Department will benefit both in the quality of software delivered and in improved return on every software dollar invested.

Computer and Communications Infrastructure

Operation of the Department's information systems relies on the computer and communications infrastructure. This infrastructure will enable operational and functional staffs to access, share, and exchange information worldwide with minimal knowledge of communications and computing technologies.

With the aim of improving information processing and reducing costs, data center consolidation recommendations were included in the 1993 Base Closure and Realignment process. In turn, the President and Congress approved the consolidation of 59 Service and agency data centers into 16 DoD Megacenters. Consistent with the goal to consolidate in the most efficient and cost-effective manner while minimizing risk and disruption to customer services, a phased approach has been established. These phases are transition, migration, and optimization. The first phase has been completed. Currently, the Defense Information Systems Agency (DISA) is migrating the workload from the 43 legacy sites to the Megacenters. Subsequently, the Megacenters' performance as data processing service providers to the DoD community will be optimized. Data center consolidation gross savings for FY 1994 to FY 1999 reflect a cumulative total of $1.1 billion.

INTELLIGENCE

There has been increasing recognition of the need and value of intelligence support for joint military operations. Over the past year, major strides have been made in aligning the policy and structure required to focus and implement future program development. For example:

- New National Intelligence Needs Process. The Department, working with other members of the Intelligence Community, established and is implementing a comprehensive process that relates consumer needs to intelligence resources in smarter, more cost-effective ways. This New National Intelligence Needs Process links the effort expended by intelligence personnel and organizations to the priorities established by customers. The process improves the management of intelligence resources and causes intelligence to be more responsive to customers' needs.
- Intelligence Bottom-Up Review. The recent Intelligence Bottom-Up Review represents the most ambitious DoD effort of the post-Cold War period to evaluate intelligence support to U.S. defense strategy. Building on the foundation of the previous DoD Bottom-Up Review, the Intelligence Bottom-Up Review comprehensively assessed intelligence capabilities in support of two, nearly simultaneous major regional conflicts (MRCs). A critical aspect of the Intelligence Bottom-Up

Review was ensuring the review completely reflected the operational demands of modern warfare and complemented the analysis in the Bottom-Up Review and concurrent planning efforts. The assessment framework replicated the immense number of intelligence requirements driven by military operations and determined how projected intelligence capabilities would operate to support fast-paced military operations. Central to the review was the full participation of representatives of the military operational community, as well as the Intelligence Community.

- Joint Military Intelligence Program (JMIP). In order to bridge existing programmatic divisions across national and service/departmental intelligence lines and to improve efficiencies in intelligence management, DoD established the JMIP. Composed of four programs -- the Defense Cryptologic Program; the Defense Imagery Program; the Defense Mapping, Charting, and Geodesy Program; and the Defense General Intelligence and Application Program -- JMIP will include initiatives, activities, and programs that provide intelligence information and support to multiple defense customers. Its objective is to provide a budgetary category for joint intelligence capabilities, as well as to promote integration of National Foreign Intelligence Program and defense intelligence activities by establishing a single program manager. The JMIP will be managed by a Defense Intelligence Executive Board chaired by the Deputy Secretary of Defense with the Director of Central Intelligence (DCI), the Vice Chairman of the Joint Chiefs of Staff, the Service Secretaries, and directors of defense intelligence agencies as members.
- Defense Human Intelligence (HUMINT) Restructuring. The Department is continuing the consolidation of the General Defense Intelligence Program HUMINT elements of the Services and Defense Intelligence Agency (DIA) by forming the Defense HUMINT Service (DHS). Scheduled to be fully operational on October 1, 1996, DHS will provide timely, integrated HUMINT support to warfighting commanders and other community consumers whose needs are managed by the National HUMINT Requirements Tasking Center.
- Defense Foreign Materiel Program. The DoD Foreign Materiel Program successfully accomplished its major acquisition and exploitation goals for FY 1994, supported by an increment of funds provided by Congress for pursuit of special opportunities. As a result of leadership by the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C^3I)), the Department joined the Intelligence Community Management Staff in conducting an extensive review of U.S. foreign materiel and technology acquisition and exploitation processes. The review resulted in several recommendations that will improve the coordination, budgeting, prioritization, timeliness, and policy for this business area, not only within defense but community-wide.
- Foreign Access to Space-Based Remote Sensing Capabilities. The Department of Defense is actively involved in implementation of new U.S. policy that allows for the sale of imagery from U.S.-owned satellite systems to domestic and foreign customers and for the export of the systems themselves, subject to certain conditions. Specifically, DoD reviews license applications to ensure the terms of the licenses are consistent with U.S. national security interests. In conjunction with the Intelligence Community, defense is also assessing the future of its intelligence partnership arrangements to ensure consistency with U.S. policy goals. Defense is a leading member of an interagency group to define those remote sensing space technologies that are sensitive and should be subject to stringent export control requirements.

COUNTERINTELLIGENCE AND SECURITY

Counterintelligence

The DoD Foreign Counterintelligence (FCI) program is an essential, contributing element to both DoD and the DCI's Intelligence Community. The principal focus of DoD FCI is to provide counterintelligence (CI) support for force protection, military operations, and protection of developing weapons systems and critical technologies. It is also a full partner in the nation's efforts to counter terrorist activity and the proliferation of weapons of mass destruction and advanced conventional weapons.

With the demise of the Soviet Union, the breakup of the Warsaw Pact, and radical political changes taking place throughout the world, the overall mission of DoD has radically changed. DoD CI has evolved as well. In addition to traditional counterespionage, its mission now encompasses support to combatant forces throughout the spectrum of conflict and military operations to include peacekeeping and peace enforcement, humanitarian assistance, and nation building. Since the end of the Cold War, demands on CI have grown and become more complex as different topics and regions rise in importance as demonstrated by the strife in Iraq, the Balkans, the Caucasus, and Central Asia; the humanitarian crisis in East Africa; and the ever changing political activity in the Caribbean. In this rapidly changing world threat environment, DoD will continue to streamline and improve CI support.

DoD CI elements continue to provide direct, tailored support wherever U.S. forces are deployed, to include naval battle groups at sea. CI personnel regularly accompany military units exercising in foreign countries, provide dedicated support to the Defense agencies, and have on-call responsibilities for locations designated in military contingency plans. DoD CI personnel have deployed in support of U.S. military operations in Somalia, the former Yugoslavia, the Caribbean, Southwest Asia, and the Eastern Mediterranean. CI serves as a force multiplier under all these circumstances, not only protecting the forces from clandestine or covert threats, but also positively affecting the outcome of military engagements when they occur, as during Operation Desert Storm.

To successfully provide the protection expected from CI in an austere resource environment, DoD CI must remain dynamic and flexible. It must more quickly identify and remain focused on dynamic threats and adopt strategic objectives that will enable DoD CI to neutralize these threats and provide decisionmakers alternatives to defend against them. As a result, the Department's CI strategy emphasizes the need to realign resources to reflect changing national security objectives. Continuing actions include reviews of CI budget execution and resource allocations; evaluations of program effectiveness; development of a DoD-wide common CI database and automated information network; improved CI support to national non-proliferation activities, to the acquisition process, to the warfighting Commanders in Chief (CINCs), to computer security programs, and to DoD HUMINT; and enhanced training programs. This strategy is consumer oriented, and CI support officers and analytical cells have been established at each DoD combatant command to help implement this strategy.

Security

Defense security programs include activities required to prevent or deter espionage, sabotage, subversion, theft, or unauthorized use of classified or controlled information, systems, or war materiel in the custody of the Department.

Opportunities for better business practices offer potential savings or enhanced effectiveness in virtually all segments of the security infrastructure. Security costs are being reduced by reasonable risk management based on objective threat assessments and coherent guidance for information classification, personnel, physical, and industrial security. One example of risk management now being implemented is the Acquisition Systems Protection process which is providing integrated CI and security to ensure uncompromised combat effectiveness of weapon systems in development. This process is resulting in more focused countermeasures for shorter periods of time. Options for increased automation are also being considered and are yielding improvements especially in the Personnel Security Program. Similarly, the introduction of advanced physical security technology is being pursued, including investments in electronic security systems to reduce reliance on fixed security forces or to make them more efficient.

The Department has also actively supported or led national initiatives in security reform to provide reciprocity, standardization, or uniformity among federal agencies and industry. One example was the publication of the first *National Industrial Security Program Operating Manual* in October 1994.

INFORMATION WARFARE

Information is becoming widely recognized within the DoD as critical to success in modern warfare. As the foundation of all C^4I efforts, Information Warfare (IW) is designed to achieve information superiority in support of national military strategy by affecting adversary information and information systems while leveraging and protecting the Department's information and information systems. Information superiority is that degree of dominance, in the information domain, which permits the conduct of operations without effective opposition. Driven by rapidly advancing technology, the IW strategy makes better use of resources to provide for a more informed force -- a force that will operate with measured lethality and increased precision.

Several new policy and programmatic initiatives are underway to better define and manage IW within the Department. As an example, a small staff has been established within the office of the ASD(C^3I). This staff is charged with the centralized planning, coordination, and oversight for IW and is continuing to conduct program reviews of selected Service and defense agency IW efforts. Additionally, several DoD-wide working groups have been established to develop innovative mechanisms to enhance cross-program coordination, especially in technology development. Furthermore, the Joint Staff has included IW as an area for their expanded Joint Requirements Oversight Council. The associated Joint Warfare Capabilities Assessment Process will help ensure the warfighter's requirements are being met, resources are effectively used, and unnecessary duplication of effort does not occur. All the military departments now have IW organizations and are coordinating projects and technology issues with the assistance of the appropriate defense agencies.

Threat identification and requirements definition are other essential first steps in developing a departmental IW strategy. Accordingly, a request for a National Intelligence Estimate (NIE) to assess the threat to U.S. national communications systems has been submitted to the National Intelligence Council. This NIE is an essential element of a broad strategy to identify critical information systems, analyze the associated vulnerabilities, and provide a baseline for the design and implementation of protective measures for information systems and the supporting physical infrastructure.

C^4I Acquisition

Oversight

The ASD(C^3I), as the Department's senior information management official, is responsible for establishing the management and oversight policy and procedures for DoD automated information systems. Major automated systems are selected for Office of the Secretary of Defense oversight if more than $25 million will be spent in one year for system acquisition, if the total system investment cost is greater than $100 million, if the total life-cycle cost is greater than $300 million, or if the system is designated as special interest. There are currently 51 major automated information systems in the Department. Of these, 35 are reviewed by the Department's Major Automated Information System Review Council while oversight of the remaining 16 systems is delegated to the responsible Service or agency. Through September 1994, the DoD Major Automated Information System Review Council completed 15 major system reviews. Among these systems are the Reserve Component Automation System, the Composite Health Care System, Army Sustaining Base Information Services program, the Joint Computer-aided Acquisition and Logistics Support program, and the Air Force Strategic War Planning System.

In 1994, the ASD(C^3I) continued the oversight and review program for DoD Federal Information Processing (FIP) resource contracts. During the year, over $5 billion of planned defense component FIP contracts were reviewed and approved. Overall, since this program was strengthened in 1992, more than $25 billion of existing and planned contracts have been subject to review and approval. The Department also continued to implement the congressionally mandated waiver process for selected Indefinite-Delivery/Indefinite-Quantity FIP resource contracts. During the year, waiver requests for over $100

million of FIPs resources were received from the defense components and approved after being reviewed for functional need, perceived benefits, and compliance with life-cycle management procedures.

Life-Cycle Management and Reform

Consistent with National Performance Review objectives and internal DoD acquisition reform efforts, the Department is reviewing the current information system acquisition and life-cycle management oversight process and procedures in order to identify areas for improvement and streamlining. Among the accomplishments to date are emphasizing the delegation of review and approval authority to lower management levels commensurate with program risk, focusing oversight reviews on major issues, staffing review decisions rather than conducting formal review briefings when no major issues are identified, and adapting oversight procedures for each individual system. The Department is reengineering the current oversight process, the results of which will be the basis for revised life-cycle management policy. The goal is to establish simplified policy, eliminate unnecessary procedures, ensure that essential information is provided to the Department's decisionmakers, and support accelerated implementation of information systems and information technology.

A major achievement in the Department's attempt to streamline the acquisition process has occurred in the Multifunctional Information Distribution System, which is under the purview of the Department's C^3I Systems Committee and the Defense Acquisition Board. This joint program was restructured to reduce both schedule and cost. In addition to savings attributable to acquisition streamlining, the program has benefited from insertion of new technologies, software reuse, incorporation of commercial products and practices, and the use of a modular open systems architecture.

PERSONAL COMPUTER POLICY

The rapid rate of change in microcomputer technology and the inherent difficulties in awarding large, multi-item, multi-agency contracts, including the inordinate delays resulting from the oftentimes multiple protests of such contracts, made it necessary for the Department to adopt a new policy of establishing personal computer contracts of relatively small scope and short duration. This new personal computer policy has changed the Department's acquisition practices. The military departments have committed to initiating a series of smaller and shorter contracts to satisfy the vast majority of their personal computer requirements over the next six years. Each of these contracts will be available to the Service doing the contracting along with the defense agencies and field activities. This will disperse the contracting actions to more vendors and diminish the feast-or-famine mode of monolithic contracts. By shortening the ordering period to two years and requiring the military departments to generate separate procurements, technologically current COTS products from more vendors will be available to satisfy the Department's requirements.

THE C^4I-Related Defense Agencies

Central Imagery Office

The Central Imagery Office (CIO) continues to focus DoD and the Intelligence Community across programs to provide responsive imagery support to the warfighter and the policymaker. CIO, as an independent entity, builds no systems and has no imagery needs. The agency is focused on ensuring that providers of imagery services meet the needs of imagery customers.

With a unique charter dedicated solely to looking at the U.S. Imagery System (USIS) as a whole, CIO has demonstrated its leadership in some highly successful community actions this past year. With community participation, it completed an assessment of the USIS and developed a USIS Architecture Migration Plan (UAMP). The UAMP, which sets the direction for imagery programs for the next 15 years, is an end-to-end imagery concept of operations and migration plan to realize needed capabilities for collection, processing, exploitation, and dissemination. CIO has also conducted and completed a major national

policy review that resulted in the security classification of nearly all national satellite imagery being downgraded to SECRET.

The CIO's future challenges are great. U.S. forces now operate in coalitions, often with partners that were recent adversaries. Military crises and humanitarian efforts are routinely occurring in geographical areas of traditionally low U.S. interest. With this in mind, the imagery users increasingly expect innovative imagery services allowing them to select imagery and imagery-derived products or parts of data bases as needed for any geographic region. In addition, CIO will continue to deploy imagery capabilities to select commands and continue to build an effective ground architecture by implementing the UAMP recommendations.

Finally, the CIO has been charged with reviewing all new and ongoing imagery programs. To help in this functional review, the agency has developed an approval process which will use a wide range of important factors such as integration into the USIS, standards compliance, and customer satisfaction to assess proposed and ongoing imagery programs.

In today's resource environment, CIO's fiscal challenge is to ensure that investments in imagery technologies, systems, processes, and people will lead to a more capable, less costly USIS. These innovative activities will help to ensure that the right imagery data gets to the right users, in the right format, and at the right time.

Defense Intelligence Agency

Driven by the reality that incremental change is insufficient to meet the challenges of the post-Cold War world, DIA has embarked upon the most profound changes in its history. First, there have been a number of initiatives affecting the Agency's internal operations. Second, changing world conditions continue to demand different types of intelligence support. The following are highlights of initiatives to address these changes:

- Support to Peace Operations. In the wake of the collapse of the former Soviet Union and the changing world environment, military operations have become increasingly oriented to peace operations and humanitarian missions. During the past year, the President directed the Intelligence Community to provide as much informational support as possible to the United Nations. DIA has been designated as the Intelligence Community Executive Agent responsible for coordinating the activities of the Intelligence Community to collect, produce, and disseminate intelligence in support of U.N. peacekeeping missions in Cambodia, Somalia, the former Yugoslavia, Rwanda, and Haiti.
- Communications. Ensuring the timely and accurate flow of military intelligence from the national level, through the Joint Intelligence Centers and Joint Task Forces, to deployed military operating forces is a top priority. Accordingly, the Joint Worldwide Intelligence Communications System and companion system, the Joint Deployable Intelligence Support System, continue to be fielded using the DISN backbone for military information exchange and communications, providing a seamless communications interface among all decisionmaking levels.
- Production Management. A major restructuring of theater and Service level intelligence production is providing sufficient capability to support most joint military operations. The DoD Intelligence Production Program (DoDIPP) will functionally integrate production and a seamless military intelligence community through centralized management and decentralized execution of production. Under the DoDIPP, production responsibilities will be more sharply focused, clearly defined, entirely requirements driven, and reflect consumer priorities.

- Collection. One recent DoD HUMINT organizational change is the consolidation of Service and DIA human intelligence collection into the DHS. Currently, DIA and the Service Intelligence Chiefs are determining the force structure required to improve support to consumers. One key facet is the development of a capability to provide timely, integrated HUMINT and counterintelligence support to warfighting commanders by deploying a Joint Operations Support Element composed of experienced military and civilian human-source intelligence personnel. This concept has been operationally deployed during the past year with exceptional success in supporting the combatant commander's time-sensitive intelligence needs. Additionally, the Defense Collection Coordination Center provides assistance to the warfighter by translating requirements into all-source collection operations; it was utilized extensively with great success during the recent regional crises operations.

Increased emphasis to support the combatant commanders has also continued with the assignment of seven more HUMINT Support Element (HSE) personnel to the Unified Commands. The HSEs are assigned to the Unified Command headquarters to provide tailored HUMINT support. They ensure that the combatant commander is kept fully informed of DoD HUMINT capabilities and ongoing collection activities. There are HSEs at every unified command except U.S. Space Command and U.S. Strategic Command, and both of those commands are scheduled to have HSEs in FY 1996.

Defense Investigative Service

The primary missions of the Defense Investigative Service (DIS) are to conduct personnel security investigations leading to the granting of a security clearance and assignment or retention in sensitive positions for DoD personnel and its contractors, and to oversee security administration in the defense industry. In fulfillment of the first mission, DIS conducted 114,200 investigations during FY 1994 for TOP SECRET access and 416,500 investigations for SECRET access and military service entrances.

Under its second mission, DIS is responsible for ensuring cleared contractor employees working on classified defense programs safeguard government secrets in accordance with established laws and regulations. To this end, DIS is working with industry and other government agencies to implement the National Industrial Security Program mandated by Executive Order 12829. The aim of this program is to standardize government security requirements imposed on industry.

Demands for DIS services have not declined at the same rate as force reductions. As an example, the military departments have been transferring inspection responsibility for Special Access Programs to DIS. In addition, increased foreign involvement in U.S. business has increased foreign ownership control and influence in the defense industry which, in turn, requires substantial attention by DIS industrial security representatives. DIS must also continue to support the Department's efforts to counter espionage by nations seeking to exploit intelligence opportunities against the United States.

In an attempt to meet demands, DIS is utilizing the DIS CIM initiative, consolidations and other organizational changes, automation initiatives, and judicious use of individual contract suppliers. The DIS CIM initiative has been the driver for DIS automation and modernization efforts. Enhanced automation will achieve a more cost-effective investigative and industrial inspection process within DoD. This will be accomplished by acquiring, developing, and effectively maintaining and operating mission-oriented information systems in an economical manner. The specific objectives of the plan include improving the accuracy, timeliness, and availability of information; facilitating agency downsizing through the effective use of automation; eliminating labor intensive work processes; and creating an automated information system for personnel security processing that has government-wide application.

Defense Information Systems Agency

Achieving national security objectives requires the fullest use of information systems to support the warfighter. In particular, the force multipliers provided by information systems are increasingly important for sustaining effective defense capabilities as forces are downsized and missions become more varied. DISA is the combat support agency responsible for planning, developing, and providing information services to support the National Command Authorities and the warfighter.

Efficient and interoperable information systems enable warfighting commanders to establish and maintain information dominance. Information for the warfighter must be integrated in a secure, seamless manner to the theater and ultimately the warrior's battlespace . This is the vision embodied in the concept of C^4I For The Warrior, and implemented in the DII and its C^4I centerpiece, the GCCS.

GCCS includes the information systems capabilities commanders need to configure their forces to fight and win. When fully implemented, GCCS will embody a network of systems providing the warfighter with the full complement of C^2 capabilities, while reducing the number of C^2 migration systems from 154 to 59. The GCCS is a model for reducing the number of migration systems in the intelligence and mission support areas. The initial deployment of the proof of concept of GCCS is complete; and as it matures, it will form the capstone of the DII.

The DII provides information processing and value-added services to users over the DISN. In the past year, the DISN was extended to cover continental United States, the Pacific, and Europe. Individual service-level networks, such as the Marine Corps Data Network, are being integrated to form the DISN. Consolidation of these individual networks achieves real savings. Transoceanic circuits are particularly expensive, and DISA's consolidation efforts already yield annual savings approaching $18 million in the Pacific and $12 million in the Atlantic. DISA is also pursuing the Commercial Satellite Communications Initiative, a congressionally-mandated effort to apply similar strategies to leased SATCOM services.

A key value-added service that rides on the DISN is the DoD implementation of Electronic Commerce/Electronic Data Interchange (EC/EDI). DoD continues an aggressive pursuit of EC/EDI where the potential for major cost savings in doing business exists for both DoD and industry. DISA was identified as the DoD EC/EDI program manager in FY 1993. DoD EC/EDI efforts are pointing the way to federal government-wide EC/EDI implementation.

Defense Mapping Agency

The Defense Mapping Agency (DMA) is the combat support agency responsible for producing mapping, charting, and geodesy (MC&G) products and services for DoD and for providing geospatial data in supporting weapons and systems including autonomous precision strike weapons. DMA supports the CINCs and Services in such critical areas as operational missions of combatant commands, safety of flight and navigation, training, and weapons system development. DMA also carries out statutory responsibilities for supporting safety of marine navigation by providing nautical charts, navigation data, and update notices. DMA ensures interoperability of MC&G support to the C^4I systems used by warfighters through the coordination of MC&G standards among the Services.

As crises occur, DMA provides unique support to deployable forces worldwide. The regional crisis response and humanitarian assistance scenarios inherent in the two MRC concept are much more demanding of DMA resources and production capacity than previous Cold War scenarios. Accordingly, DMA is enhancing the responsiveness of its production system by developing the capability to use alternate sources for the production of MC&G products and services, potentially including imagery and

materials from commercial vendors and foreign national sources including the former Soviet Union. In addition, DMA will continue to support requirements for aeronautical safety and hydrographic navigation safety products, to include making data available to users in digitized format.

DMA is using its digital production system to populate a large global geospatial information data base and will pursue the capability to provide MC&G users with direct access to new global geospatial information and services. As the 1990s draw to a close, DMA will need to recapitalize its production system to take advantage of technological advances and to offset personnel reductions resulting from DoD downsizing and reduced DoD budgets.

Overall, DMA's cooperative MC&G arrangements with over 100 countries help augment internal production, establish DMA products and specifications as the standard, and provide access for potential support during crises. In the Pacific, DMA is working on new cooperative agreements with Australia, Japan, and Malaysia; new digital data exchanges with South Korea and Thailand; and new GPS surveys in China, Thailand, and the Philippines, and is providing support for the Cambodian mine cleaning effort. DMA is also building partnerships with the New 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 Albania, Estonia, Latvia, Lithuania, the Czech and Slovak Republics, Romania, Hungary, and Poland. Additionally, negotiations are now underway for new initiatives in Bulgaria, the Ukraine, and Russia.

National Security Agency

The National Security Agency (NSA), as a combat support agency, continues to work closely with the commands, Services, and the Joint Staff to improve its support to military operations. NSA possesses a quick reaction capability to deploy personnel and equipment to respond to a crisis or contingency. Over the past year, NSA has provided personnel to operations such as Provide Promise, Sharp Guard, Deny Flight, Able Sentry, and Restore Democracy.

In each instance, NSA has provided tailored intelligence support to the customer and, in concert with other members of the Intelligence Community, has participated in the NIST concept. Through NIST, NSA ensures a fused effort that supports the warfighters with responsive intelligence in a usable format. NSA and NIST have demonstrated versatility and flexibility through the ability to refine intelligence support, associated communications infrastructure, and information flow. Also, crisis response cells internal to NSA provide dedicated, sometimes 24-hour support to CINCs and their associated field intelligence elements. These cells are often created well in advance of U.S. involvement and help shape policy decisions while, at the same time, the cells contribute meaningful information for the CINCs' preplanning. Response cells provide concentrated intelligence reporting and a focal point for complete customer service.

In addition to the ability to respond quickly in the event of a crisis or contingency, NSA provides dedicated support to designated commands and agencies through Cryptologic Support Groups. These groups are composed of experienced analysts who provide support to their specific command or agency. Since mid-1993, NSA has provided personnel, computer and communications equipment, and intelligence information to support a multinational organization in Naples, Italy. This organization was established to provide tailored intelligence to the military forces operating in the Balkan region.

Finally, NSA, as DoD INFOSEC Program Manager, develops and orchestrates INFOSEC efforts to create and maintain the security infrastructure necessary to protect and support U.S. national interests. Chief among these efforts are network systems security engineering, electronic key management, global

network security management, and provision of products and services that protect the privacy, availability, integrity, and authenticity of national security information produced and exchanged electronically.

CONCLUSION

DoD is evolving from a Cold War posture to a smaller, more mobile and more flexible force and infrastructure capable of projecting power anywhere in the world on short notice. At the same time, the Department is positioning itself to engage in a much broader spectrum of missions, ranging from deterrence and regional conflict to peacekeeping and humanitarian assistance. The Department is aligning and focusing its C^4I programs to maximize benefits for the warfighter in this changing environment. As the Department downsizes from its late 1980s posture, technological superiority and operational flexibility must be attained through a combination of better intelligence, sophisticated C^2, highly motivated and trained C^4I personnel, and global defense information access for all DoD activities. Within the realities of downsizing and reduced defense spending, the Department has a C^4I program which addresses these requirements of the 1990s and beyond.

DEFENSE BUDGET

INTRODUCTION

President Clinton's FY 1996-1997 defense budget begins implementation of the Department's FY 1996-2001 Future Years Defense Program (FYDP). Both continue the restructuring of America's defense posture to reflect the end of the Cold War and the collapse of the Soviet Union.

The Clinton Administration's blueprint for defense restructuring has been the Bottom-Up Review (BUR), which was completed in September 1993 and reflected in last year's budget submission and the FY 1995-1999 FYDP. In preparing this new budget and FYDP, DoD leaders carried out a thorough, year-long assessment of defense strategy, force structure, priorities, and programs. The assessment was informed by all available sources of information, including: U.S. operations in Somalia, the Persian Gulf, Haiti, and elsewhere; military exercises and studies; and feedback from commanders and troops serving at home and abroad. In general, the assessment validated the primary recommendations of the BUR, although this year's budget contains important differences compared to last year's -- for example, full military pay raises authorized under current law.

America's future security will be robustly protected with the dollars allocated to DoD by the President. The new budget and FYDP strike a prudent balance between immediate military needs, like readiness, and long-term safeguards, like basic scientific research. They also are consistent with the nation's pressing fiscal constraints.

THE DEFENSE TOPLINE

The President's FY 1996 budget requests $246.0 billion in budget authority and $250.0 billion in outlays for the Department of Defense. The topline amounts shown in Table VII-1 are projected to be sufficient to support the FY 1996-2001 FYDP. The topline for those six years includes the $25 billion that President Clinton added to strengthen readiness, fund higher military pay raises and other quality of life improvements, and provide for real growth in FY 2000-2001 to help pay for weapons modernization.

Several months before the President's decision, DoD officials recognized that they faced a potential gap of $49 billion between the defense topline amounts projected for FY 1996-2001 and the likely cost of the FY 1996-2001 FYDP if it included full military pay raises and strong support for force readiness and military quality of life. As a result of this possible gap, the Deputy Secretary of Defense directed a study of possible modernization program reductions, in order to support higher priority spending for readiness and people.

During final preparation of the FY 1996 budget and FY 1996-2001 FYDP, this $49 billion gap was eliminated by the following:

- $25 billion added by the President.
- $12 billion saved because of lower inflation projections.
- $12 billion in reductions/changes in program plans. (These cuts were much less severe than they would have been had the President not intervened.)

Table VII-1

National Defense (050) Topline
(Current $ Billions)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
BUDGET AUTHORITY							
DoD Military (051)	252.6	246.0	242.8	249.7	256.3	266.2	276.6
DoE* and Other	10.9	11.8	10.6	9.9	9.9	9.9	9.9
Total 050	263.5	257.8	253.4	259.6	266.3	276.0	286.5
Percent real change	-1.9	-5.3	-4.1	-0.1	-0.2	+1.1	+1.2
OUTLAYS							
DoD Military (051)	260.2	250.0	246.1	244.2	249.6	257.9	261.6
DoE and Other	11.4	11.4	10.9	10.3	10.0	9.9	9.9
Total 050	271.6	261.4	257.0	254.5	259.7	267.8	271.5
Percent real change	-5.4	-6.6	-4.4	-3.6	-0.6	+0.6	-1.2

* Department of Energy.
NOTE: Includes $2.6 billion FY 1995 supplemental appropriations request for contingency operations.

As an example of the lower than expected future inflation, the Employment Cost Index, on which by law military pay is based, has been set at 2.9 percent for FY 1996, down from last year's projection of 3.7 percent. This lower projection is consistent with the fact that FY 1994 inflation turned out to be less than previously estimated.

None of the $25 billion from the President is aimed at covering DoD's unbudgeted spending for ongoing contingency operations, primarily in Haiti, Bosnia, and Southwest Asia. To cover those incremental costs, an FY 1995 emergency supplemental appropriations request is being forwarded to Congress at about the same time as the President's budget.

In determining funding needed to support the FYDP, individual programs were properly priced based on current estimates of inflation. The Department also used realistic projections for future program costs and likely savings from reforms and other changes.

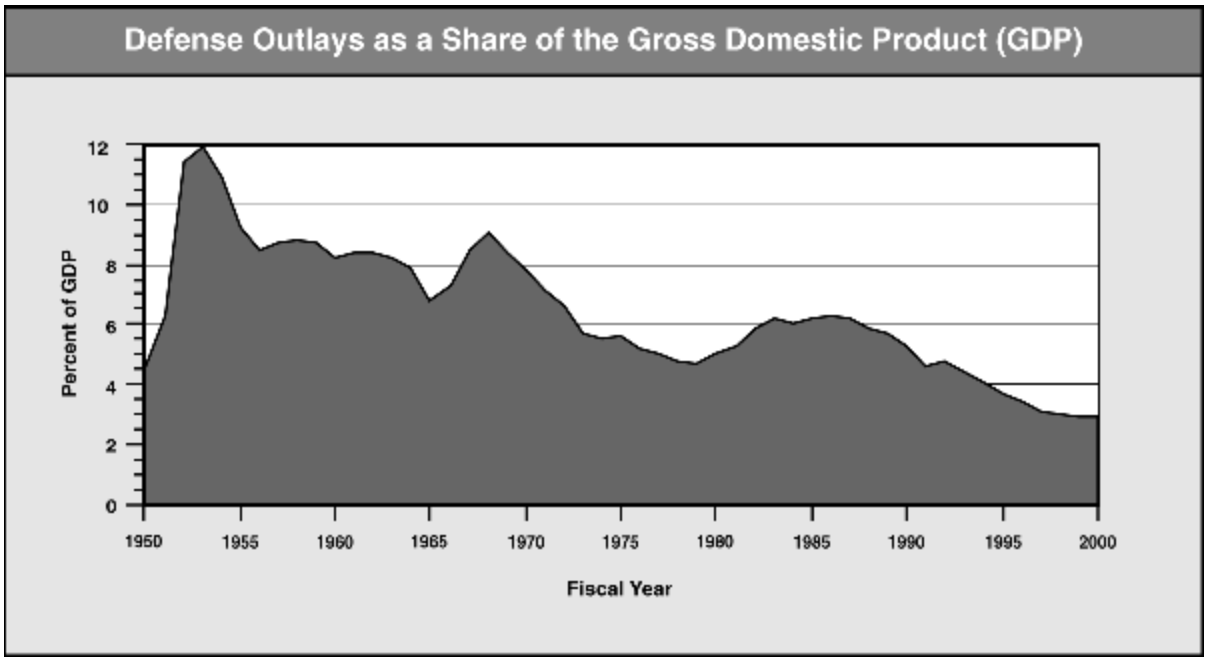
Requested FY 1996 DoD budget authority is, in real terms, 39 percent below FY 1985, the peak year for inflation-adjusted defense budget authority since the Korean War. (See Table VII-2.) Under the President's budget, by FY 1997 the cumulative real decline since FY 1985 will reach 41 percent. In FY 1998 and FY 1999, DoD budget authority will rise just enough to keep pace with inflation, then experience a real increase in FY 2000 and FY 2001, primarily because of higher funding for procurement.

Table VII-2

DoD Budget Authority
(Dollars in Billions)

Growth Year	Current Dollars	Constant Dollars	Real Growth Percentage
1985	286.8	402.2	--
1986	281.4	384.6	-4.4
1987	279.5	370.3	-3.8
1988	283.8	362.6	-2.1
1989	290.8	357.5	-1.4
1990	293.0	349.7	-2.2
1991	276.2	314.5	-10.1
1992	281.9	314.7	-0.0
1993	267.4	289.3	-8.1
1994	251.4	264.8	-8.5
1995	252.6	259.7	-1.9
1996	246.0	246.0	-5.3

FY 1985-96 real change: -39%



As a share of America's gross domestic product, DoD outlays are expected to fall to 3.4 percent in FY 1996, well below any time since before World War II. (See chart on preceding page.) Other long-term trends for defense spending are detailed in Appendix B. Budget authority by appropriations title and by DoD component, in current and constant (inflation-adjusted) dollars, is also shown in Appendix B.

PRIORITIES IN THE FYDP AND FY 1996 BUDGET

People, Quality of Life, and Readiness

The new budget and FYDP give top priority to keeping U.S. forces ready to fight and win. Above all this means taking good care of uniformed people and their families, which in turn requires strong support for quality of life issues like pay, housing, and medical services. Putting people first and ensuring high readiness are mutually reinforcing goals. On the one hand, preserving the high morale and quality of people depends on enabling them to train rigorously and prepare properly for possible future combat. On

the other hand, the quality and morale of men and women in uniform determine -- more than any other factors -- the readiness of America's armed forces.

A rough measure of DoD support for readiness is funding for Operation and Maintenance (O&M) accounts, from which come spending for training, supplies, maintenance of weapons and equipment, and other readiness determinants. In real terms, FY 1996 O&M budget authority is only about 16 percent below its FY 1985 Cold War peak. This is less than half the 39 percent decline in overall DoD budget authority for FY 1985-1996. Moreover, by 1996 the size of U.S. forces and inventories of equipment and facilities will have declined by over 30 percent from 1985 levels; thus, FY 1996 O&M funding compares even more favorably with Cold War levels since it supports fewer forces and less infrastructure.

The preceding data corroborates what is the real measure of readiness -- the actual preparedness and performance of U.S. forces. When called upon during crises, America's armed forces continue to react swiftly and decisively. However, when unbudgeted missions arise, O&M funds often must be diverted from forces not involved; readiness suffers when this happens. The new FYDP and FY 1996 budget provide strong support for readiness, but they cannot accommodate major diversions of O&M funds to unrequested or unbudgeted uses. When O&M dollars and other resources decline unexpectedly, readiness will suffer unless those resources are replaced and/or supplemented expeditiously.

Force Structure and End Strength

As shown in Table VII-3, by FY 1996 the BUR-based restructuring of U.S. forces will be nearly complete.

Table VII-4 shows the decline in personnel strengths since FY 1987, the post-Vietnam War peak for the end strength of both active duty military and DoD civilians. (Selected Reserve strength peaked at 1,137,600 in FY 1991.) The decrease in DoD civilians reflects reductions in forces and facilities, as well as reforms to streamline defense infrastructure and improve management. Other personnel data is in Appendix C.

Table VII-3

Force Structure[a]

	Cold War FY1990	Base Force Plan[b]	FY 1995	FY 1996	BUR-Based Plan[c]
Army -- active divisions	18	12	12	10	10
Reserve component brigades[d]	57	34	46	46	42
Marine Expeditionary Force[e]	3	3	3	3	3
Navy aircraft Carriers	15/1	12/1	11/1	11/1	11/1
Carrier air wings	13/2	11/2	10/1	10/1	10/1
Battle force ships	546	430	373	365	346
Fighter wing equivalents	24/12	15/11	13/8	13/7	13/7
Ballistic missile submarines	34	16	16	17	14
Strategic bombers(PAI)[f]	268	176	141	127	150+

[a] Dual entries in the table show data for active/reserve forces, except for carriers, which depicts deployable/training carriers.
[b] Bush Administration's planned FY 1995 force levels, as reflected in the January 1993 Annual Defense Report.
[c] Levels differ slightly from those recommended in the BUR for bombers.
[d] An approximate equivalent. The BUR plan calls for 15 enhanced readiness brigades, a goal that DoD will begin to reach in FY 1996. Backing up this force will be an Army National Guard strategic reserve of eight divisions (24 brigades), two separate brigade equivalents, and a scout group.
[e] One reserve Marine division, wing, and force service support group supports the active structure in all cases.
[f] Primary Aircraft Inventory -- excludes aircraft in depot maintenance, attrition reserve, and so forth.

Table VII-4

Department of Defense Personnel
(As of End of Fiscal Year)

	FY 1987	FY 1995	FY 1996	Percent Change FY 1987-1996
Active Duty Military	2,174,200	1,523,300	1,485,200	-32
Guard and Reserve	1,150,900	965,000	927,100	-19
DoD Civilians	1,133,100	866,900	828,600	-27

Procurement and Research and Development(R&D)

The greatest drop in spending since the late 1980s has been for procurement. In FY 1985, budget authority for procurement peaked at $96.8 billion, which equates to $135.7 billion in constant FY 1996 dollars. FY 1996 requested budget authority for procurement is $39.4 billion. Thus in real terms, DoD budget authority for procurement declined by 71 percent between FY 1985 and FY 1996. This is nearly twice the FY 1985-1996 decline for total DoD budget authority (39 percent).

The new FYDP begins the recapitalization of U.S. forces -- that is, the modernization of weapons and equipment to ensure that they remain qualitatively superior to those of likely future adversaries. To fund the carefully planned upgrading of existing systems and the fielding of new ones when required, budget authority for procurement will experience a real increase of 47 percent between FY 1996 and FY 2001. Specific modernization programs are detailed in the Defense Components chapters.

Streamlining Defense Infrastructure

Streamlining the U.S. defense infrastructure (bases, facilities, and support organizations) is a critical part of the restructuring of America's defense posture. It requires both reductions to infrastructure, as well as realignment to achieve optimum effectiveness and efficiency. Major reductions are being accomplished through the base realignment and closure process described in the chapter on Infrastructure and Logistics.

DEFENSE BUDGET ISSUES

Readiness and Contingency Operations Costs

Ever since America fully embraced its global leadership role in the aftermath of World War II, U.S. Presidents have ordered unplanned deployments of the nation's forces for diverse security and humanitarian operations. Over the years, Congress has been asked to approve supplemental appropriations to help the Department of Defense cover its costs for such unbudgeted operations, and the response has been nearly always favorable. For example, to help DoD cover its FY 1994 costs for contingency operations, Congress last year passed two emergency supplemental appropriations requests totaling $1.5 billion.

Supplemental appropriations usually are not passed until several months after contingency costs are incurred, and this is what can hurt force readiness. The main problem is, that while awaiting supplemental funds, DoD is very limited in what it can do to pay contingency costs without cancelling readiness-related spending. These limitations include:

- Fiscal year integrity must be preserved. DoD does not have authority to transfer appropriated money from one fiscal year to another.
- Spending in a fiscal year must be for a bona fide need in that fiscal year. DoD does not have authority to obligate this year's money to pay for next year's needs.

- Transfer authority is limited. This limited transfer authority is usually exhausted to pay unanticipated bills other than those from contingency operations. Moreover, it often takes months to receive congressional approval of proposed reprogramming of funds from one account to another -- far too long to cover fast breaking contingency requirements.
- Anti-deficiency violations must be avoided. Funds cannot be obligated or expended in excess of appropriated amounts, nor obligated in advance of an appropriation. Additionally, DoD does not have authority to obligate funds appropriated for one account for needs covered by another.

The effect of these limitations is that without adequate supplemental appropriations well before the end of a fiscal year, unfunded contingencies can only be paid from O&M funds for that year, and that can hurt readiness. The vulnerability of readiness to such O&M cuts is magnified by the fact that DoD has little flexibility to divert funds from many programs within O&M accounts. DoD only has genuine flexibility to tap funds appropriated for operations/training, depot maintenance, and operations support and transportation. For FY 1995, these flexible funds total $27 billion; draining these accounts by $2.6 billion (DoD's estimated FY 1995 costs for unbudgeted contingencies) would damage readiness, especially because most of the impact would be concentrated in the fourth quarter of the fiscal year.

What can be done to prevent contingency operations from hurting readiness? Part of the answer is full and prompt funding of supplemental appropriations. In addition, the preservation of readiness requires a new legislative authority to deal with contingency operations. The Clinton Administration is asking Congress to grant the Secretary of Defense limited new authority to enable him to protect readiness more dependably in this and future years. This readiness preservation authority would operate like overdraft protection on a checking account. It would not give DoD more money. It would let DoD protect the readiness of operating units in anticipation of later supplemental funding. It provides for rescissions to pay for any use of the authority unless the President determines that emergency conditions exist that preclude such rescissions.

Categories of Defense Spending

During the past year, the Congressional Research Service (CRS) and others have identified what has been termed nondefense or nontraditional spending within the DoD budget. Their implication or assertion was that such spending could be cut without damage to U.S. military strength, or that it should be transferred to a more appropriate executive department.

The FY 1996 defense budget contains only funding that helps fulfill its statutory and inherent responsibilities. There are no nondefense programs in the FY 1996 budget.

To resolve the confusion created by CRS and others on this issue, it is useful to assess these programs in terms of the following budget categories:

- Core military activities. Cooperative Threat Reduction and other targeted programs are in fact immensely helpful ways of supporting core defense missions. Reducing threats is at least as important as spending money to counter them.
- Inherent/prescribed management responsibilities. Some critics proposed to cut or transfer virtually all DoD funding for environmental programs. But these, and many similar programs, include responsibilities that are either legally mandated or are unavoidable DoD obligations to its personnel, their families, and the civilian communities that surround defense facilities.
- Dual-use investment. Dual-use programs, which are of benefit to both the defense and private sectors, are as old as America. For example, the National Guard and Army Corps of Engineers have crucial domestic missions. Likewise crucial for the future are dual-use programs -- such as the targeted Technology Reinvestment Program -- that foster technical advances on which U.S. military superiority so heavily depends.

- Broader citizenship responsibilities. Some targeted activities in this category -- like drug interdiction, humanitarian assistance, and security at international sports events -- could be transferred to others. But if DoD has substantial expertise for such activities, it is a reasonable national policy to exploit that. Each year Congress decides which of these activities to fund.

As suggested by the above abbreviated list of alleged nondefense programs, the national security benefit of certain DoD expenditures is clear once properly analyzed. After the past year's rigorous program and budget review, DoD leaders believe that the FY 1996 defense budget presents the best fulfillment of their responsibilities as stewards of U.S. security.

There are programs appropriated by Congress every year which do not fit this framework and which present little value to the Department. The Department again calls on Congress to limit this diversion of limited funding from needed defense programs to unnecessary activities of marginal value to the national defense program.

CONCLUSION

Events since the end of the Cold War have demonstrated the need for America to retain a strong leadership role and a prudent defense posture. President Clinton's FY 1996 defense budget and FY 1996-2001 FYDP support that need, while remaining fiscally responsible.

REPORT OF THE SECRETARY OF THE ARMY

On June 14, 1775, more than a year before our nation's declaration of independence, the Continental Congress founded an American army. Since that time, the United States Army has served the nation in peace and war. Today, the Army continues to answer the nation's call around the world. The United States Army is the world's premier land combat force, trained and equipped for combat missions and military operations other than war. The Army team consists of active forces, the Army National Guard, the Army Reserve, and Army civilians -- each vital to the success of the whole as the Army moves into the 21st century.

A STRATEGIC FORCE

As the United States moved from a Cold War security strategy of containment to one of engagement and enlargement, the Army changed itself to prepare for the challenges ahead. The Army's tremendous versatility gives the President and the Secretary of Defense the option of employing tailored infantry, armor, airborne, air assault, and special operations forces to achieve U.S. national security objectives. America's Army has truly become a power projection Army. Most Army forces today are based within the United States; however, supported by the other Services, the Army can project and sustain a ground combat force anywhere in the world.

A DECISIVE FORCE

The Army plays a unique role in the defense of our nation. History shows that wars are won on the ground and the Army is the only Service capable of prompt and sustained land combat operations. The nation requires a technology-enhanced land combat force that can deter potential adversaries and protect U.S. interests around the world. America's Army is that force. Only the Army has the assets and the staying power to operate over an entire battlefield and bring a conflict to its successful military conclusion, regardless of the opponent or region of the world. Successful military operations require the control of the air, sea, and land, but a nation's ability to impose its will can be assured only if it is capable of controlling the land. The Army -- and only the Army -- provides the United States that capability.

A FORCE SERVING THE NATION

America's Army serves the nation in many ways. Although its primary mission is to fight and win the nation's wars, the Army can execute military operations other than war because it is trained and ready. The training and expertise required for operations other than war may be specialized, but these missions require the same disciplined troops that we rely upon for combat. In the last year, American soldiers have upheld democracy in Haiti, faced down a new threat to regional stability in Southwest Asia, delivered relief supplies to Rwandan refugees in Zaire, conducted a peacekeeping exercise in Russia, reinforced peace in the Sinai, supported refugees in the Caribbean, protected United Nations operations in Somalia, treated the wounded in Croatia, demonstrated resolve in Macedonia, deterred aggression in Korea, and continued to support law enforcement efforts to stem the flow of drugs into the United States. America's Army also fought floods in the Southeast and forest fires in the West and provided earthquake relief in California.

Two recent operations demonstrate the versatility of today's Army. They also demonstrate that force -- or the threat of force -- is still a partner of diplomacy in today's changing world. Operation Uphold Democracy in Haiti highlighted the Army's ability to tailor itself to accomplish specific tasks, to project power on short notice, and to adapt to a changed mission on even shorter notice. Originally structured to forcibly enter the country to restore the elected government, our plans were quickly modified to enter the country without opposition to implement a diplomatic agreement. Intervention in Haiti also demonstrated an unprecedented level of joint operations. A Navy admiral commanding U.S. Atlantic Command chose

the Army's XVIII Airborne Corps as a joint task force headquarters. Commanded by an Army general, this joint task force of Army, Navy, Air Force, Marine, and Coast Guard units was prepared to execute simultaneous combat actions throughout the area of operations. Finally, the operation saw the Army demonstrate that we are a force of the future. Army forces carried an amazing array of 21st century equipment, from advanced night vision devices and international maritime telephones, to laptop computers with antennas to downlink the latest intelligence.

The second example of Army capabilities occurred on the other side of the world. In October 1994, Operation Vigilant Warrior saw the deployment of thousands of Army troops to Kuwait to deter renewed aggression from Iraq. Soldiers from the 24th Infantry Division were first airlifted to the emirate, where they received equipment prepositioned in the country and moved a battle-ready force to the Iraq-Kuwait border within 72 hours of arrival. Other forces followed to link up with prepositioned ships carrying Army equipment. The quick and decisive reaction of the United States, as demonstrated by its Army on the ground, caused the Iraqi government to withdraw forces poised to threaten an American ally.

A quality Army is not possible without quality soldiers; this record of service is testimony to the high quality of the men and women serving the nation. In a world of precision munitions and high technology weapons, the individual American soldier is the Army's ultimate smart weapon. The standard of service provided comes with a price. The Army and the nation were all reminded of that price in May 1994, when President Clinton presented the nation's highest award for valor, the Medal of Honor, to the widows of Master Sergeant Gary I. Gordon and Sergeant First Class Randall D. Shughart, killed in action the previous October in Somalia. Since 1989, the Army has awarded over 700 Purple Hearts to soldiers killed or wounded in action and presented another 1,239 medals for valor. Army families also pay a price. American soldiers train hard; on average, they spend 140 days every year away from home, leaving their spouses and children behind.

A READY FORCE

Today's Army is trained and ready to answer the nation's call, a call that is coming more and more often than ever before; it is no easy task to prepare for the future while remaining trained and ready in the present. Hard decisions and sometimes unenviable trade-offs are demanded to best utilize scarce resources.

Readiness is a combination of many factors -- tough training, quality soldiers and civilian employees; modern equipment that overmatches that of potential adversaries, well-maintained installations with modern infrastructure and housing, sustainment capabilities to support deployed forces; and a quality of life for soldiers and their families that keeps good soldiers in the Army and attracts quality young people.

To optimize readiness and maintain the Army's role as a strategic force supporting U.S. foreign policy, America's Army is forging a new balance among active, Guard, and Reserve forces. At the start of a contingency mission, active units will form the bulk of a force, while high priority National Guard and Army Reserve units provide capabilities not found in the active component. As the operation progresses, a larger proportion of forces will come from the Guard and Reserve; they will support deploying forces, back-fill active units, enhance the mobilization base, reinforce sustained operations, and if needed, expand the Army to meet a larger global threat. The Army must have access to these units and individuals. The Guard and Reserve will also play an increasingly important role in military operations other than war. Both National Guard and Army Reserve soldiers served in Somalia and nearly 5,000 were called up for operations in Haiti. In January 1995, the Army began deploying a composite battalion of soldiers from the active and reserve components to the Sinai for duty with the Multinational Force and Observer organization. Guard and Reserve soldiers also serve the nation at home, reacting quickly and capably in 1994 to domestic emergencies like forest fires, floods, and earthquakes.

As the Army becomes smaller and more dependent on technology, Army civilians and contract personnel will become even more important to its readiness and success. Dedicated civilians support America's

Army superbly -- at home, with overseas forces, and in contingency operations. Army civilians possess skills critical to the Army's success, make vital contributions to the nation's defense every day, and are irreplaceable players on the Army team.

Recognizing that readiness is enhanced by eliminating unnecessary barriers to service, the Army has expanded opportunities for women. More than 91 percent of the Army's career fields and 67 percent of Army positions are now open to women. Women serve today in leadership positions throughout our officer and noncommissioned officer corps. In 1994, the Army opened more than 32,000 additional positions to women in military police companies, chemical reconnaissance and decontamination teams, military intelligence units, forward support teams, medium girder/assault bridge companies, and ceremonial units in the nation's capital. The headquarters of maneuver brigades, forward area air defense artillery battalions, special forces groups, combat engineer battalions, and armored cavalry regimental aviation squadrons have also been opened to women. These developments benefit not just the women whose careers will be advanced as a result, but also the Army and our nation's defense.

Army families are a key component of readiness. As the Army deploys units more frequently, Army families must be prepared to deal with the stress and family decisions that deployment brings. Through the Army Family Action Plan, a bottom-up process beginning with family symposia at the installation level, the Army identifies, prioritizes, and ultimately resolves quality of life issues, providing improved services to soldiers and their families, which ultimately increases the Army's operational efficiency.

A 21ST CENTURY FORCE

Today's Army is on the move, transforming itself from a forward-deployed Cold War army to a power projection force based largely in the United States. The Army is restructuring itself into a 21st century fighting force, experimenting with new technologies, and reengineering its sustaining base. The Army is improving its air, land, and sea embarkation points to enhance strategic mobility. In the midst of tremendous change, America's Army has reaffirmed its long-standing tradition of selfless service to the nation. The Army knows where it is going; it has a plan to get there; and it is fully embarked on that journey. Our choice in this journey is between changing shape or shaping change -- and we will do the latter.

Today, the Army is building the information age army of tomorrow -- Force XXI. For Force XXI, information will be almost as important as ammunition. The Force XXI army will overmatch its adversaries by integrating state of the art information technologies with the weapons of today and tomorrow. Leaders of Force XXI will act on real-time information and near real-time intelligence. Because it will be a power projection force, installations and infrastructure will be vital to its success.

The Army's modernization strategy has fundamentally changed to keep in step with the realities of today's environment. A modernization vision of land force dominance requires that the Army achieve five modernization objectives -- rapidly project and sustain forces, protect committed forces, win the information war, conduct precision strikes, and dominate the maneuver battle. America's Army is executing a strategy of buying a limited number of new weapons, while extending the lives and improving the capabilities of our existing systems. Inserting information technologies significantly increases the power of proven weapons, a realistic and cost effective strategy for the near to mid-term. However, the Army will reach the point where additional technological insertions to today's systems will provide only marginal improvements to capabilities. New, replacement weapons systems must continue to be developed.

A JOINT FORCE

In any conflict and in most military operations other than war, the Army will operate with air, naval, and space assets as an important part of a joint service team. Our basic doctrine recognizes the joint nature of most Army operations. The Army provides versatility, depth, and staying power to the joint commander, with forces tailored for a given situation to achieve the best synergy across the joint force as a whole. The

Army trains its forces to operate in a joint environment, sends quality soldiers to serve on joint staffs, and provides ready forces to support regional commanders-in-chief.

The Army's commitment to joint operations is one of the key points made to the commission appointed by Congress to examine the roles, missions, and functions of the military Services. America's Army will provide the commission the full benefit of its institutional and intellectual experience regarding the nature of modern warfare and the engagement of military forces in the world today. The Army has participated fully in issue identification. Today's Army has a sound vision of the future which harnesses information technologies in a trained and ready force.

A REINVENTED FORCE

While retaining and improving the programs that have successfully built a ready Army, the Department of the Army is fundamentally changing the way it does business. The Army is at the forefront of government in its implementation of National Performance Review principles and initiatives. The National Performance Review and its DoD counterpart, the Defense Performance Review, created an environment for change and the Army is responding. Army reinvention laboratories, especially the Battle Labs of the U.S. Army Training and Doctrine Command, allow the Army to test new ways of doing business, cut red tape, and provide incentives for new ideas. Across the board, the Army has institutionalized a quality approach to managing change. It has begun to reinvent the Department of the Army headquarters and major Army commands whose missions are to staff, train, equip, maintain, and sustain fighting units. Much as civilian businesses have become more efficient by modifying internal operations, the Army seeks to utilize scarce resources better by fundamentally reexamining the way the departmental headquarters and supporting commands function.

The Army is also making fundamental changes in the way it develops, acquires, and fields new capabilities. The goal is to eliminate non-productive costs, thereby dramatically improving the development, testing, acquisition, and fielding of weapons and information systems. By emphasizing the horizontal integration of new technology, the Army is leveraging its research and development resources to save time and money.

The Army is also capitalizing on sound and innovative business practices. In August 1994, the Army implemented a new policy to waive restrictive regulations that impeded efficiency, under which only the Secretary or Under Secretary of the Army may disapprove requests for waivers. Functions, organizations, equipment, and facilities that do not contribute to the Army's mission are being eliminated; user fees are being established; functions and facilities are being consolidated when cost-effective and consistent with Army missions; and economies are being realized by consolidating with other Services and defense agencies. America's Army is transforming its financial management in line with the Chief Financial Officers Act of 1990. The Army's commitment to the Department of Defense's implementation of the Government Performance and Results Act is demonstrated by three activities -- the Army Audit Agency, Army Research Laboratory, and the Corps of Engineers' Civil Works Operations and Maintenance Program -- which are participating as pilots.

A FORCE DRIVEN BY RESOURCES

More than any single factor, resources affect the Army's capabilities, readiness, and effectiveness. A quality Army, prepared to execute a variety of operations, costs money. The resources on which the Army depends have steadily decreased in real terms -- a decrease of over 33 percent in total obligation authority since FY 1989 -- while operational deployments are up 300 percent. This decline in resources is one of the Army's toughest challenges . Sustaining a quality force requires Army leaders to make difficult choices between operational readiness and a needed investment in modernization. Readiness is the Army's first priority.

Contingency operations like those in Rwanda, Haiti, and Iraq can present special resource problems. Pending reimbursement from supplemental requests, major Army commands must divert funds from

maintenance, training, and quality of life programs. While deferred maintenance can be performed eventually and spare parts can be purchased later, lost training opportunities are gone forever. Army leaders will continue to manage resources to minimize the impact of contingency operations on other Army accounts. However, congressional assistance is needed to ensure that supplemental funding and reprogramming requests are approved expeditiously.

AMERICA'S ARMY -- READY TO ANSWER THE NATION'S CALL

America must always remember that war is -- and will remain -- a human endeavor, subject to emotion and characterized by the shedding of blood and by the effects of chance. Warfare in the future will not be remote, bloodless, sterile, or risk free. It will still be war, and ultimately, wars are won by soldiers on the ground. America's Army today is trained and ready to put overwhelming combat power on the battlefield to defeat all enemies when needed. At times, force may not be the answer; the Army is also prepared to serve the nation by capably executing military operations other than war. Today's Army is a high quality force -- able to deploy rapidly, to fight, to sustain itself, and to win quickly with minimum casualties -- an army of courageous men and women willing to put their lives on the line for their country. As it has been since 1775, the United States Army is ready to answer the nation's call.

Togo D. West, Jr.
Secretary of the Army

REPORT OF THE SECRETARY OF THE NAVY

MOVING TO THE 21ST CENTURY

During 1994, the Department of the Navy moved forward with vision and determination to shape the forces for the needs of today and the future. While tough decisions were being made in Washington and our Fleet and Force headquarters to ensure present and future readiness, the Navy-Marine Corps team continued to fulfill its missions worldwide.

Operating tempo was extraordinarily high, the highest recorded for non-deployed forces and, excluding Desert Storm, the highest in a decade for deployed forces. The requirement for flexible, capable naval forces to project power from the sea and to maintain forward-deployed units in the most critical regions of the world continued unabated in the wake of declining force structure. As the Department of the Navy moves into the 21st century, we will continue to avoid the pitfalls of a resource and requirements mismatch that could place the National Military Strategy and our ability to protect the interests of the United States abroad at risk.

THE STRATEGIC ENVIRONMENT

The vital economic, political, and military interests of the United States are global, located across the world's oceans and intersecting those of regional powers. The littorals are where the Naval Service -- operating from sea bases in international waters and projecting power ashore -- directly influences events.

Two years ago the Naval Service defined a new strategic concept, ...*From the Sea*, to meet the challenges of the post-Cold War environment and to shift the focus from open ocean warfighting to operations in the littorals. Events over the past year have underscored this change in focus and reinforced our commitment to enhancing capabilities in crisis response, power projection, and employment of naval forces from the sea. As challenges around the world have unfolded, we have not allowed our strategic thinking to stagnate. This year we refined our strategic thinking in a new White Paper entitled *Forward...From the Sea*, which continues the strategic evolution of naval forces forward-deployed, operating in the littorals as an instrument of U.S. foreign policy.

Forward-deployed naval forces -- manned, equipped, and trained for combat -- play a key role in demonstrating both the will and the capability of the United States to join with our friends and allies to defend shared interests. Should diplomacy fail and conflict erupt, naval forces provide the means for prompt sea-based reaction. This year, the Navy-Marine Corps team is more capable than ever of applying overwhelming combat power, executing forcible entry quickly, and providing the protective cover essential to enable the flow of follow-on heavy forces.

Naval forces provide essential capabilities across the broad spectrum of operations -- from strategic deterrence to peacetime presence operations to warfighting in the major regions of the world -- tailored for national needs and shaped for joint operations. These accomplishments are possible only through the efforts of our extraordinary men and women, operating superior equipment, and with outstanding support.

NAVAL FORCES IN ACTION -- 1994

During this past year, the Naval Service has focused on the projection of power from the sea in the littoral regions of the world. The ability to mass forces quickly in response to crises has enhanced the demand for

Naval expeditionary forces. Operating tempo and personnel tempo, including the use of Reserve assets, have increased to ensure the Naval Service's ability to support the nation's global military requirements. Measures have been developed and employed to allow response to crises at an acceptable risk in more stable areas. These include tethering (having battle groups near enough for acceptable response times) and gapping (selectively limiting the duration of presence in stable areas of interest).

PEACETIME OPERATIONS

Naval forces are an indispensable instrument of American foreign policy. In peacetime, our forces build interoperability -- the ability to operate in concert with friendly and allied forces -- so that we can participate fully on multinational teams or as part of coalitions forged to react to short-notice crises. Participation in both NATO Standing Forces and in a variety of exercises with the maritime, air, and land forces of coalition partners around the Pacific Rim, Norwegian Sea, Arabian Gulf, South America, and Mediterranean basin provide solid foundations for sustaining interoperability with our friends and allies.

Over the past year, forward-deployed U.S. naval forces have contributed significantly to humanitarian assistance and disaster-relief efforts -- from Bangladesh to the Philippines. Additionally, the Partnership for Peace efforts with former Warsaw Pact countries show promise in forming solid foundations on which to build interoperability and mutual cooperation, further enhancing regional stability.

The same forces that are dispersed around the globe are also in the best position to react to crises or to provide the initial enabling force in a major regional contingency. Forward-deployed Naval Forces are the link between peacetime presence operations and response to a building crisis or major contingency.

THE ROLE OF PRESENCE

The mere presence of naval forces is insufficient to deter potential aggressors unless those forces also possess the capability to respond rapidly and effectively with credible combat power. Forward-deployed surface combatants such as the new ARLEIGH BURKE class destroyer -- with the enhanced AEGIS Combat System capability -- will play an important part in deterring the proliferation and use of ballistic missiles by extending credible defenses to friendly and allied countries. Carrier Battle Groups and Amphibious Ready Groups with embarked Special Operations Capable Marine Expeditionary Units provide Unified Commanders with the necessary building blocks to mass forces quickly in response to a building crisis. Submarines, capitalizing on their inherent stealth, endurance, and firepower, prepare the battle space for naval forces responding to any crisis. These naval forces complement the capabilities resident in the Army and Air Force, giving the warfighting Commanders in Chief a fully capable joint force which can be sized to respond to any emerging crisis or major contingency.

The sovereign quality of naval forces, operating in forward areas, allows them to be employed free of the diplomatic encumbrances that may inhibit or otherwise limit the scope of land-based operations in forward theaters. This is a unique characteristic of naval forces. The advantages of such a highly flexible and capable force have been proven many times during the past year in such diverse ways as non-combatant evacuation operations in Rwanda, refugee assistance in Cuba, and crisis management off the coasts of Korea and Kuwait.

Whether surging from adjacent theaters or from homeports in the United States, naval forces are uniquely positioned, configured, and trained to provide a variety of responses in the face of unexpected international crises. A good example of the versatility and importance of our forward-deployed naval forces are the accomplishments of the PELELIU Amphibious Ready Group and embarked 11th MEU(SOC) during this year's regularly scheduled six-month deployment. While deployed they conducted

four major operations that included one non-combatant evacuation operation in Rwanda and a major search and rescue operation off the coast of Kenya. These both occurred while maintaining watch over the highly volatile situation in Somalia. In most of these situations, forward-deployed naval units were the only force able to meet the initial response time constraint of the crisis. Further accomplishments showing the operational flexibility and responsiveness of naval forces in 1994 are highlighted in Table VIII-1.

Table VIII-1

1994 U.S. Navy/Marine Crisis Operations

Date	Forces	Original Deployment	Crises Location
February 1994	USS INCHON ARG 24th MEU(SOC)	Mediterranean Sea	Somalia
April 1994	USS PELELIU ARG 11th MEU(SOC)	Somalia	Rwanda (NEO Ops)
July 1994	USS GUAM ARG 26th MEU(SOC)	Mediterranean and Adriatic Seas	Somalia
July 1994	USS KITTY HAWK CVBG	Indian Ocean	Korea
August 1994	USS TRIPOLI ARG 15th MEU(SOC)	Mombasa	Entebbe, Uganda
September 1994	USS WASP	CONUS	Haiti
September 1994	USS INCHON ARG 24th MEU(SOC)	CONUS	Haiti
October 1994	USS AMERICA/USS EISENHOWER CVBGs	CONUS	Haiti
October 1994	USS GEORGE WASHINGTON CVBG	Mediterranean Sea	Red Sea/Iraq
October 1994	USS TRIPOLI ARG 15 MEU(SOC)	Persian Gulf	Kuwait
December 1994	USS GETTYSBURG USS HALYBURTON	CENTCOM AOR	East Coast of Africa (Achille Lauro Passenger Rescue)

PEOPLE

People are the key to readiness. Sailors, Marines, and civilians; Active and Reserve; men and women from all walks of life and every part of American society are the heart of the Naval Service. We fully intend to keep faith with our people who are the core of our readiness to respond quickly and decisively in regional conflicts throughout the world. Maintaining properly motivated and trained Sailors and Marines during these challenging times requires careful planning and effective management of personnel issues. To these ends our manpower strategy seeks to recruit the highest quality men and women; retain our high quality active, reserve, and civilian career force; provide proper compensation for the job we ask our people to do; enhance the quality of life we provide our Sailors, Marines, and their families; maintain a tolerable operating tempo by maintaining overseas deployments of six months, with about a year of training and refit between deployments; achieve remaining personnel reductions through a reasonable plan utilizing the management tools already provided by Congress; maintain a high caliber officer corps with reasonable promotion opportunity and timing; sustain our combat readiness by ensuring reasonable promotion opportunities; provide innovative programs to offer Commissions to our best enlisted

personnel; and target bonuses to those Sailors and Marines whose essential skills will form the core of our future force

Over the past year, recruiting challenges have grown in what continues to be a tough recruiting environment. A smaller population base, reduced civilian unemployment, shrinking recruiting budgets, and a public perception that the military is not hiring make meeting our enlistment goals in both the active and reserve components of the Navy and Marine Corps a decided challenge. With the infusion of resources into our recruiting programs and the extraordinary effort of a superb force, we met the formidable challenge in FY 1994, achieving accession goals with extremely high quality new recruits. Although we are meeting present needs, we must enhance resources and improve recruiting performance to maintain the high quality standards necessary to sustain a top-notch fighting force. Today our people serve in a smaller, more technologically oriented, more survivable force, which will continue to require high caliber professionals as the foundation upon which all else is built. To this end, the Department of the Navy remains committed to recruiting and retaining the best and brightest men and women. Once recruited, our young Sailors and Marines receive leadership and character training which builds upon the core values of the Naval Service: honor, courage, and commitment. In the Navy and Marine Corps Reserve, we continue to seek out and retain the best Sailors and Marines separating from active duty. Reserve recruiting is placing special emphasis on acquiring the correct mix of skills and pay grades needed to meet Reserve requirements, drawing on that cadre of Sailors and Marines who leave active service and desire to maintain a military affiliation.

Both the Navy and Marine Corps achieved accession goals in quality and quantity for FY 1994, but neither service fully met its Delayed Entry Program contract goals. To continue meeting accession goals in FY 1995, the Navy and Marine Corps will need to rely more heavily on direct market recruiting, i.e. immediate commencement of active duty for qualified prospects. Nonetheless, we intend to maintain the quality that has proven to be so important to enhanced performance and reduced attrition. Recruiting an all volunteer force in a competitive employment market continues to demand a properly resourced, well-motivated, and fully supported recruiting effort.

Similar challenges are evident in the Department's civilian cadre. It is imperative that we actively pursue force-shaping measures designed to attract and promote talented new people while remaining faithful to the career transition needs of our senior civilians.

To help solve this recruiting dilemma, we will recruit from the broadest possible pool of eligible recruits. As the demographics of America change, our commitment to attract recruits from all areas of society requires a wider focus and a range of new initiatives. Diversity is an overarching goal of the Department. We are aiming at eliminating gender barriers so that we will be able to recruit from the highest quality pool of candidates throughout our society. Additionally, the Department has committed to recruit, train, and promote more minority men and women by the year 2000 to ensure that the Naval Service reflects the American society it serves -- a population that is projected to include 12 percent African-Americans, 12 percent Hispanics, and 5 percent Asian-Pacific Islanders by the turn of the century. We are increasing opportunities for women. Several classes of combatant ships, from AEGIS destroyers to nuclear-powered aircraft carriers, have already embarked women Sailors, and more will follow. More than 90 percent of all career fields are now open to women in the Navy and Marine Corps. Such policies and programs exemplify the Department's commitment to optimal integration and the fostering of a climate where all members, regardless of race or gender, can compete fairly to achieve their maximum potential.

To improve overall readiness, the Department is committed to providing the best possible quality of life for all of our people and their families. When individual and family needs are met, our Sailors and Marines can devote their total energy to military duties without unnecessary distraction. Major efforts to

improve base housing, provide equitable pay incentives and bonuses, and keep the workplace free of harassment and discrimination continue to receive heavy emphasis. Key legislative initiatives include authorizing quarters allowances for single E-6s on Sea Duty, broadening Family Separation Allowance eligibility, and broadening eligibility for Sea Pay. The Department of the Navy increased appropriated fund support to the Morale, Welfare and Recreation program by $65 million in FY 1994 and provided additional funds for the outyears. Family Service Centers are receiving additional resources to ensure continued support to members and their families. The Navy's Neighborhoods of Excellence program and the Commandant's Housing Campaign Plan are designed to develop and revitalize Navy and Marine Corps housing as the foundation of our family housing investment strategy. Programs aimed at prevention of family violence have also received increased emphasis and funding. Additionally, improvements in bachelor and family housing continue to be a priority quality of life issue essential for the well being of the force.

During this fast-paced and demanding year, Navy and Marine Corps operational and shore safety efforts produced a record performance. Reductions of safety-related incidents were recorded in nearly every category (see Table VIII-2).

Table VIII-2

FY 1994 Department of the Navy Mishap Summary (Number of Class A* Mishaps and Fatalities)

	Class A Aviation (including flight related and ground)		Fatalities					
			Operational		Motor Vehicle		Other	
	FY 1993	FY 1994	FY 1993	FY 1994	FY 1993	FY 1994	FY 1993	FY 1994
Navy	40	20	49	23	116	86	36	29
USMC	18	9	44	11	48	43	16	18

* Class A Mishap = Total cost of reportable damage is $1 million or more; a DoD aircraft, missile is destroyed; or an injury or illness results in a fatality or permanent total disability.

For example, the Navy and Marine Corps experienced only half as many Class A aviation mishaps this year as in 1993, personnel fatalities dropped 32 percent, and operational fatalities were reduced by 63 percent. New operational safety equipment and programs, including improved afloat and ashore safety training, will sustain this reduction of losses and associated costs, reflecting our unwavering commitment to saving lives and preserving irreplaceable assets.

As we enter the final 25 percent of the drawdown, it is imperative our force-shaping tools shift to support retention of the force for the future. The Department of the Navy at the turn of the century must be comprised of the right people, in the right pay grades, with the right skills, ready to operate *Forward...From the Sea*. We must see through the rightsizing process and focus on the future now to ensure a ready, capable force for the 21st century.

READINESS

Well-trained people, operating modern, well-maintained equipment are the cornerstone of today's Navy-Marine Corps team. Readiness of Reserve and Active forces is the foundation of the credibility of the U.S. military as an instrument of U.S. foreign policy and resolve. Consistent with Administration and congressional priorities, the Department of the Navy has given current readiness top priority.

Despite resource reductions, we continued to perform all the missions assigned to naval forces. However, the pace and cost of supporting unanticipated contingencies and commitments hinder our efforts to stay ready. The diversion of funds within our Operations and Maintenance accounts which finance contingency operations required us to defer maintenance and training for units not deployed. While we expect to recoup most of the actual dollars lost through supplemental appropriations, we are rarely able to fully recoup lost training opportunities.

Future readiness also received increased attention during the year as we continued to recapitalize to meet the national security requirements of the 21st century. In its simplest terms, future readiness is a function of force structure, a mixture of active and reserve forces, and funding. Reduced funding and force structure require us to carefully balance our resources and to realign our priorities to ensure we sustain our readiness both in the near and long term.

Examples of force structure realignments include modifications to the initial LST class ship decommissioning plan which, when coupled with an innovative enhanced amphibious lift plan, will maintain a 2.5 MEB equivalent lift capability. These two plans will remain in effect until sufficient numbers of LPD-17 and LSD-49 class ships become operational. In addition, the retention of some Guided Missile Frigates (FFGs) will better enable us to meet anticipated operational tasking. However, maintaining current readiness was sometimes accomplished at the expense of future readiness either in recapitalization programs or research and development efforts.

Another important readiness feeder is redirected savings from base closings. We must reduce infrastructure as planned to achieve the savings essential for current operational readiness and future recapitalization efforts. We have anticipated approximately $700 million annual steady-state savings from the upcoming round of closures. If this process is delayed, underfunded, or if our estimates regarding closure costs prove to be inaccurate due to emergent requirements, then the savings we have projected will not be realized.

Since at any given budget level there is a trade-off between force structure, readiness, and modernization, we are continuously reviewing trade-off options as operational commitments, resource levels, threats, and investment opportunities change. In calendar year 1995, we will continue to give priority to current readiness and we will continue to downsize. But, as in the past, we will again review our strategy with the benefit of another year.

TECHNOLOGY

As we size our naval forces to meet today's mission needs, we must continue to modernize weapons, systems, and platforms. Maintaining the technological superiority we now hold over potential adversaries is absolutely essential to success with a smaller force operating in the dynamic and demanding littoral environment.

Operating in the littoral environment demands that naval weapons systems and equipment be survivable, suited to joint operations, and support maneuver warfare from the sea. The variety of threats and evolving missions defined by the post-Cold War security environment mandate improvement in our ability to conduct Theater Ballistic Missile Defense, Naval Surface Fire Support, air-to-ground strike, mine countermeasures, surveillance, communications, sealift, and amphibious lift. Programs such as the Flight IIA DDG 51, the SEAWOLF-class attack submarine, V-22, the New Attack Submarine, the F/A-18E/F, and the Joint Advanced Strike Technology program are designed to meet these mission needs in an affordable manner.

Just as the capabilities of today's naval forces are the direct result of past science and technology successes, the quality of our future naval forces is contingent upon today's investment in science and technology. The Department's recapitalization strategy is based upon our ability to field technologically superior forces in the future. In our commitment to sustaining the Department's science and technology program, we have integrated technology development, from scientific research through prototyping, and have focused our efforts on programs to rapidly insert affordable new capabilities into acquisition programs.

The Department's acquisition strategy focuses on three areas. First, we seek advanced technology insertion in all of our acquisition programs. Recognizing that scarce resources will not support development of many new systems, we are updating our most capable and relevant weapons systems, platforms and equipment by fully exploiting the most promising technologies available in the marketplace. Acquisition reform enables us to adopt commercial practices, products, and technology, which in turn allows us to reap the benefits of rapid insertion of advanced technology at a lower cost.

Second, affordability is considered at every step in the acquisition decision process. By working closely with our partners in industry -- through innovative efforts such as Advanced Concept Technology Demonstrations and the Manufacturing Technology Program -- we are proving new concepts while mitigating technical and production risks before committing to full scale development. Because only the most promising technological opportunities will be considered, we can expect greater assurance of weapons system development at realistic costs.

Advanced Concept Technology Demonstrations offer the prospect of reduced cycle time as we leverage off technologies developed in the commercial sector. Partnerships with industry also provide significant economic advantages to the commercial sector as our participation reduces their costs and expands the market for commercial products.

Third, we are pursuing dual-use technologies by maximizing the use of Commercial Off-the-Shelf and Non-Developmental Items. Acquisition reform efforts are concentrating on removing traditional barriers to using commercial products and technologies. For example, we are pursuing spin-on and spin-off technologies. The first uses commercially available technologies that can be adapted for military use. The E-2C Hawkeye carrier airborne warning and control aircraft mission computer upgrade is an excellent example of such a program. The Global Positioning System (GPS) is an example of a spin-off technology, a system originally developed for military navigation, but which has many civilian uses as well. With overall procurement numbers down, we can no longer afford to maintain an entirely separate defense industrial base.

Prudent investments in science and technology programs and acquisition reform initiatives play a crucial role in our quest to maintain the flexible and highly capable naval forces this nation requires to meet global challenges now and in the 21st century.

EFFICIENCY

The Department of the Navy continues to pursue innovative ideas to radically change the way it operates. We are learning a great deal from America's innovators in private industry who have set an example for increased efficiency and effectiveness through process reform. As a result of our lessons learned from industry, the Department has undertaken several major initiatives: waiver authority delegation, cycle time reductions, and acquisition reform.

The waiver authority delegation initiative speeds up and encourages the process of eliminating unnecessary and burdensome restrictions on the operational commands. The cycle time reduction initiative will create shorter turn-around times on all processes so as to create savings that can be realized in improved readiness. Acquisition reform has been discussed in the past but is now becoming embedded within the acquisition process with the establishment of the Deputy Under Secretary of Defense for Acquisition Reform. In summary, all three initiatives are seeking to reengineer key management processes so that taxpayers will receive the best return for their invested defense dollars.

In addition to these efforts, the Department has several real success stories in 1994. For example, we began integration of Navy and Marine Corps tactical air (TACAIR) wings. As a result of this effort to manage TACAIR as a Department of the Navy asset, the requirement to stand up five additional light attack squadrons was eliminated at a cost avoidance of approximately $700 million over the period of the Future Years Defense Program. Finally, we are decreasing costs by pursuing closure of three naval shipyards and three aviation depots selected in BRAC 1991 and 1993. Once closure is complete, we will have reduced three of six of our aviation depots and three of eight of our naval shipyards to align capacity with need.

Another achievement in efficiency during this past year was the Department's revision of the program and budget development process. We are reemphasizing the Planning in the Planning, Programming and Budgeting System to make sure that we select the right programs and initiatives for investment. Our evolving new process is concept-based. We are assessing resources and requirements against our operational concept *Forward...From the Sea*. The process is effectively integrated for the first time in three dimensions -- Navy, Marine Corps, and Secretariat. The program and budget we develop will be accountable to a rigorous and comprehensive set of Joint Mission and Support Area Assessments that respond to the guidance of our leadership and the operational requirements of our Fleet and Force Commanders, and complement the Joint Warfare Assessments conducted by the Expanded Joint Requirements Oversight Council in the Joint Staff.

The Department fully embraces the opportunity for increased effectiveness and efficiency which the ongoing Roles and Missions review brings. We welcome the internal and external analysis of our methods, procedures, and organization at all levels that is required to support the important objectives of the Commission.

The Department's overall objective is to provide a high quality, cost effective process that maximizes the return for every defense dollar invested. We are meeting that objective, but we recognize that the future will pose even greater challenges.

CONCLUSION

The Department of the Navy has taken substantial action this year to size forces for today while continuing to recapitalize for the future. Maintaining the balance between current and future requirements is an ongoing challenge. As the post-Cold War world continues to evolve, so must naval strategy and forces necessary to execute the strategy. Our analysis of strategy and process tells us that the Department's course is correct. The accomplishments of our Sailors, Marines, and civilians have proven our concepts at home and around the world. The Navy-Marine Corps team is the key component in America's forward presence operations, engaging allies in constructive exercises and deterring potential aggressors with highly flexible and credible forces. If deterrence fails, we will fight and win.

John H. Dalton
Secretary of the Navy

REPORT OF THE SECRETARY OF THE AIR FORCE

The United States Air Force remains the premier air and space force in the world, and 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 roles in support of this mission: sustaining nuclear deterrence, providing versatile combat forces, supplying rapid global mobility, controlling the high ground of space, and building U.S. influence around the world. These roles have assumed heightened significance in the post-Cold War era. Air and space power provide an economical means for shaping the international environment through global presence, and increasingly underpin national capabilities to conduct decisive combat operations worldwide on short notice.

Since our birth in 1947, the Air Force has been an institution that thrives on change, but never so successfully as during the past several years. We have cut personnel by a third, fighter forces by nearly half, and the bomber force by two-thirds. Our budget is down 40 percent from its Cold War high. During this period, the Air Force recreated itself. First came The Year of Organizing. We restructured top to bottom -- consolidating major commands and redefining authority so people charged with new missions control the resources to do the job. Next came The Year of Training. We are now implementing life-cycle training processes in support of all USAF requirements. Following that was The Year of Equipping. We reinvigorated planning -- developing roadmaps across 40 mission areas to make educated decisions which balance current readiness with modernization needs. Finally, this past year was The Year of Readiness. We strengthened readiness forecasting and are poised to win future battles through better resource management today. Thus, in a very real sense, this year will be a year of dividends. The forward-leaning initiatives of the past four years are yielding big returns. Today's Air Force is simpler, more flexible, tougher, less expensive to operate, and focused on the tasks ahead.

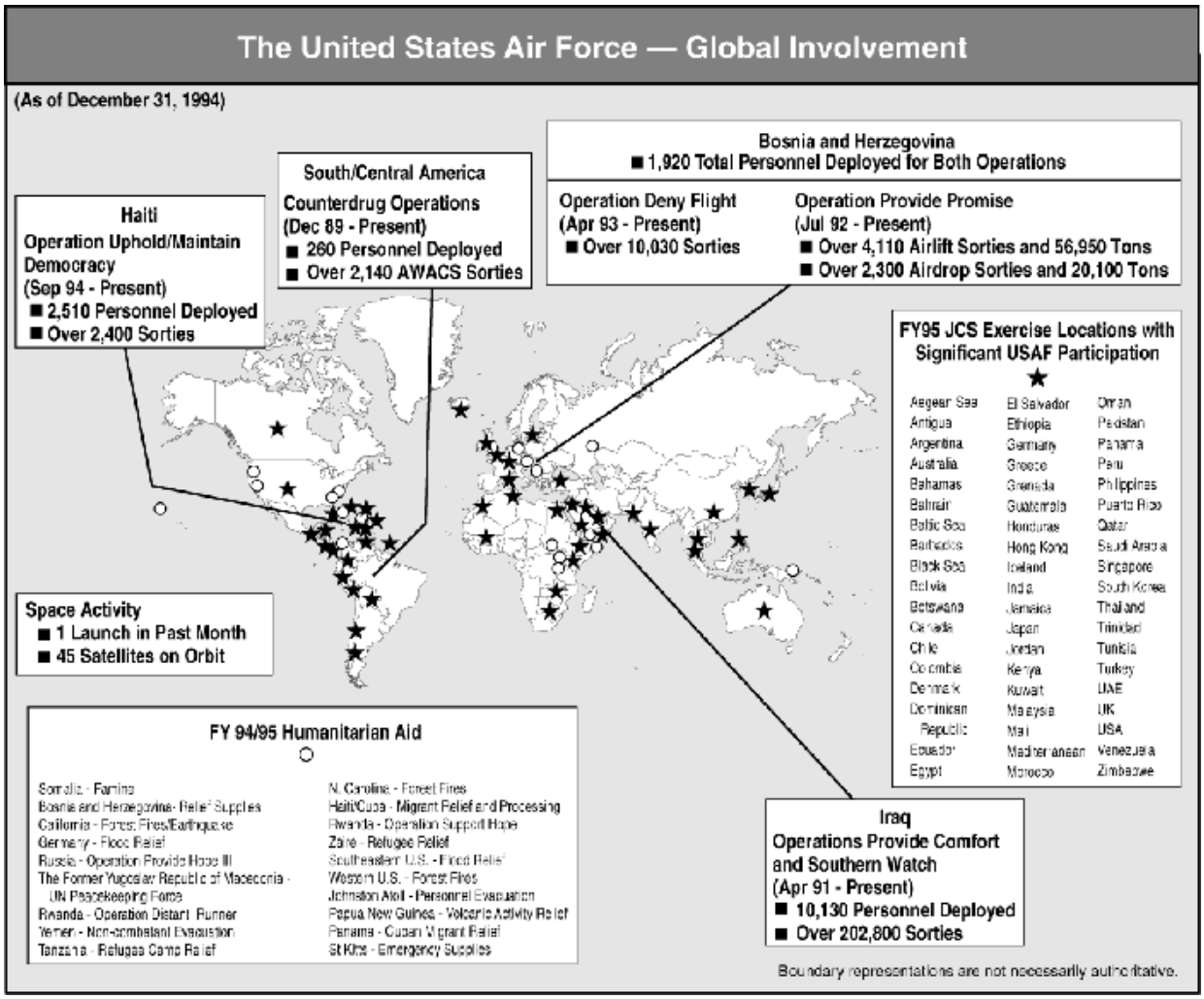
Yet, while resources have diminished, demands for air and space power are increasing. This trend suggests bigger challenges in the next decade than those we surmounted in the past. In a world defined by contingencies, we have set our sights on four objectives to help guide us in these turbulent times: remaining engaged, supporting our people, preserving combat readiness, and building for the future. This Report recounts our accomplishments in these areas and identifies key challenges.

ENGAGEMENT

The new world environment required a new National Security Strategy aimed at providing stability for the emergence of new democracies. The Air Force is fully engaged in support of that strategy. While personnel strength has fallen a third across the force and 50 percent overseas, the number of people on temporary duty overseas is up fourfold since the Berlin Wall fell. Our global reach forces operated in nearly every country in the world this year. We delivered 75,000 tons of relief to Bosnia and 15,000 tons to Rwanda and Zaire. Our airlift and tanker forces continue to support contingency operations in Europe, Southwest Asia, and the Caribbean, as well as conduct humanitarian missions in these and other areas around the globe.

Our combat components are also charting new territory. Almost 50 percent of our active duty fighter force is continuously engaged overseas. These forces support alliances, promote stability, and provide sustained combat power on-demand throughout Europe, Asia, and the Middle East. We have flown 18,000 sorties over Bosnia. In February, our F-16s downed four jets attacking targets in a prohibited zone. In the Persian Gulf, we have flown more than three times as many missions since Desert Storm as we did during the war itself. Within 10 days of Iraq's provocation last fall, 122 combat aircraft had augmented

the 67 already deployed, and we had flown 1,000 sorties in support of Vigilant Warrior. To drive the point further, four bombers on a power projection mission punctuated American resolve by flying nonstop from the United States to deliver 55,000 pounds of bombs within audible range of Iraqi forces. As Secretary Perry said, "The Air Force has really deterred a war. When we deployed F-15s, F-16s, and A-10s in large numbers, I think they got the message very quickly."



Another increasingly important vehicle for Air Force engagement involves expansion of our military-to-military contacts. Since 1993, our security assistance personnel have worked in 101 countries to foster stability, sustain hope, and provide relief. Air Force training reached 4,900 international students in 1994. In fact, 29 graduates of our schools are now their nations' Air Force Chiefs of Staff. Contacts with states of the former Soviet Union and Eastern Europe are also thriving. We have exercised with Russian, Polish, and Lithuanian militaries. We have sponsored CINC counterpart visits and base and unit exchanges. Thirteen U.S. states have partnerships with new nations as a result of our Air National Guard's Building Bridges to America program. Finally, our liaison teams in 12 host states provide expertise on everything from civil-military relations to chaplaincies. Through these contacts, we share American military skills, insights, and values -- so foreign militaries can better help themselves and so we can operate better with them.

Finally, in response to the burgeoning requirements of engagement, the Air Force has reconceptualized presence -- what it is, why we do it, and how best to support joint requirements. Our concept of presence includes all peacetime applications of military capability that promote U.S. influence. Correspondingly, the way we exert presence is changing. We are augmenting a reduced permanent presence overseas with information gathering systems linked to joint military capabilities that can be brought to bear either proactively or just-in-time.

Our space and airborne collection platforms help provide global situational awareness. Sometimes this information, by itself, can promote U.S. influence. In other cases, information linked to forces that can react swiftly with the right mix of joint capabilities anywhere on the globe reduces the need for traditional physical presence. Permanent presence is still imperative in many areas. And even where it is not, we routinely verify our global commitments through deployments. But we do not need and cannot afford to be everywhere at once. We can exercise more influence in more places by providing assistance, assurance, or deterrence either periodically or on-demand. This allows for maximum effective use of our air and space forces to help build U.S. influence jointly and globally, while controlling risks and minimizing costs.

SUPPORTING OUR PEOPLE

People are the ultimate guarantors of combat readiness. Attracting and retaining quality people depends upon providing a reasonable quality of life. This means three things: providing acceptable standards of living, treating people with dignity and respect, and managing stresses associated with high deployment tempos.

Acceptable Standards of Living

The Air Force boosted quality of life funding 5 percent this year. We are focusing on key areas such as child care, housing, and family support. We provide quality child care for 45,000 families each day at substantially less cost to our personnel than commercial caregivers. We are arresting growth of deferred maintenance for housing; exploring privatization to improve access to quality units; and working towards private rooms for unaccompanied enlisted personnel. Family support activities such as parenting, chaplaincy, and abuse prevention programs are reaching more people. Finally, in response to an increasing number of families citing financial strains, we have doubled financial training for new recruits.

We have accomplished much, but much remains to be done. The President's recent commitment to the highest level military pay raise permitted by law will help stop the fall in military pay against that of the private sector, but the gaps generated in past years will continue to grow (albeit at a much slower rate). Therefore, we must continue to look for opportunities to improve the lot of those who serve in today's Air Force and their families. The Department's renewed commitment to a better quality of life, through investments totaling $2.7 billion, is an important step in our efforts to counterbalance that pay gap and to achieve needed retention levels. At the same time, we will continue to pursue ways to reduce the substantial out-of-pocket housing and moving expenses that now are absorbed by military families.

Recruiting also remains a top priority, yet in recent years American youth have been turning away from military service. The propensity to enlist is down 35 percent since 1990, and some speculate that young people doubt our ability to provide career opportunities that are challenging yet stable. The recently enacted boosts to our advertising appropriation should help correct that misperception, but some concerns remain. We aggressively monitor recruiting trends, and stand ready to pursue the resources necessary to achieve excellence in this area so vital to long-term readiness.

In sum, 1994 signaled a year of rededication to members of the Air Force and their families -- a dedication to more equitable pay, to providing a better quality of life, and to excellence in recruiting and retention. We will continue to build on these accomplishments in the year ahead and recognize our responsibility to move quickly in arresting any adverse trends that might emerge.

Treatment of People

The Air Force is setting new standards in the equitable treatment of people to enhance unit effectiveness and cohesion. Our focus is in two areas: eliminating discrimination and harassment, and enhancing professional opportunities. Air Force leaders at all levels are getting the word out -- discrimination and harassment have no place in our profession and will not be tolerated. Our policy is clear, educational processes are continuously being improved, and local commanders are empowered to deal with incidents in a frank, open, and proactive way. Correspondingly, opportunities for professional growth have been clarified and expanded. Year of Training initiatives resulted in life-cycle education and training objectives which reduce uncertainties concerning requirements for advancement. New opportunities are also available to women, who now compete for over 99 percent of all positions.

Managing the Stress of Deployments

Lastly, we are working to reduce the stresses associated with high deployment tempos. Personnel deployment tempos are up fourfold in as many years. Average annual deployment rates for special mission and support aircraft are particularly high: HC-130 -- 194 days; EC-130E -- 187 days; E-3 -- 165 days; U-2 -- 148 days; AC-130 -- 146 days; MH-60G -- 145 days; RC-135 -- 143 days; F-4G -- 135 days; C-130 -- 126 days, with corresponding demands on support personnel. To reduce stress on our people, we are broadening support bases for affected platforms, targeting family support for affected units, distributing deployment burdens through our Palace Tenure Program, and working with our Air National Guard and Air Force Reserve partners to balance mission loads across the Total Force.

PRESERVING COMBAT READINESS

Resource Management

Year of Readiness initiatives produced three critical enhancements to Air Force readiness. First, we strengthened readiness forecasting. Our improved Status of Resources and Training System ensures all units provide readiness snapshots not only of current health, but forecasts looking 3, 6, and 12 months ahead. This system helps predict the impact of resource decisions as well as to uncover weaknesses before readiness erodes.

Second, the way we support weapon systems is being fundamentally altered. Lean logistics is an integrated effort among maintenance, supply, and transportation systems to provide the right part, at the right time, at the best price to the user. Lean logistics selectively removes one whole tier of maintenance support for highly reliable weapon systems, reduces depot maintenance time, and uses transportation procedures like those of commercial package carriers. The results are impressive. In the avionics area, for instance, repair pipeline times have been cut by 75 percent.

Third, we are enhancing readiness through better distribution of mission tasks across the force. The Air Force is making increasing use of the world-class capabilities of our Air National Guard and Air Force Reserve. These affordable, accessible, and highly capable partners are integral to our warfighting strategy. They are also making decisive contributions in peacetime contingency operations around the world. We have expanded their mobility roles, introduced bombers, and are funding key upgrades that reflect our

increasing dependence on these citizen-airmen in front-line roles. In a similar vein, the Civil Reserve Air Fleet has been expanded to provide 34 percent of our cargo and 90 percent of our passenger capability. Finally, we are obtaining authority to use U.S. air forces assigned to NATO on a temporary basis outside the region when required.

Combat Training

Realistic combat training is not a luxury, but a necessity. We have insisted on strong funding profiles for all combat training programs. What began 20 years ago as a modest exercise concept known as Red Flag has since become the backbone of USAF readiness. As one commander put it, "What we did in Desert Storm would have been impossible if the entire Air Force didn't have flag exercise experience." Now all Air Force flag exercises are joint or combined. Similarly, the Air Force is a full partner in all major Army exercises at the National Training and Joint Readiness Training Centers. Finally, we bring our high training standards to over 50 major joint and combined exercises around the globe each year.

Underpinning this, of course, is the realistic day-to-day training that prepares our people for these large exercises. Thus, we maintain high day-to-day training tempos across the force, and daily operations increasingly emphasize composite and joint force operations to build on basic formation skills. Finally, we continue to enhance combat training through simulation, but primarily as a supplement to flight operations. Teamwork and uncompromising standards measured in a realistic flight environment are the touchstones of warfighting excellence. We will continue to arm our people with experiences that mimic the crucible of war in its most demanding phases.

Challenges

Stability in our Operation and Maintenance (O&M) budget is key to maintaining Air Force readiness, and that stability depends on timely funding for contingency operations. If future funding is delayed, then the balance between force structure and readiness support could easily be upset. We would then have less ability to deal with spot-readiness setbacks in systems such as AWACS, F-117s, EF-111s, B-1Bs, C-5s, C-141s, AC-130s, and in engines for the F-15 and F-16. These problems are manageable, but there is little margin for error. A related concern is the impact of contingency operations on combat training. Heavily tasked units have fewer opportunities to hone their complete repertoire of combat skills. We need continued stability in our O&M accounts, including timely funding for contingencies, in order to manage these problems.

BUILDING FOR THE FUTURE

Planning Savvy

As General Shalikashvili said, "The combination of slower modernization rates and a rapidly changing threat environment makes long-range planning more difficult and more important." The Air Force has set standards in this area, developing 25-year roadmaps across 40 mission areas to make educated decisions about modernization needs. These plans link future tasks to deficiencies, to candidate solutions and to laboratory programs for an end-to-end view of each mission area. We evaluate alternatives ranging from non-material options, to changes in force structure, systems modifications, science and technology applications, and new acquisitions. Correspondingly, we continue to evolve and reform the manner in which we conduct the acquisition of systems and capabilities. Through numerous initiatives, we are streamlining the process, reducing the paperwork, adopting commercial practices, standards, and processes, all aimed at more effectively and efficiently placing the required capabilities into warfighters hands.

This new planning process and our initiatives in acquisition reform are major milestones, but they are also just the beginning of a renaissance in Air Force planning and systems acquisition. 1995 is the 50th anniversary of the Air Force Scientific Advisory Board (SAB), whose first reports set the trajectory for Air Force modernization for decades. This year will see a similar level of effort by the SAB, Air Force planners, Air University, and our acquisition and modeling and simulation activities. I have challenged our best and brightest to revolutionize and institutionalize new planning and acquisition processes that will prepare us for the 21st century.

Essential Foundations

Air Force scientific and technological prowess remains the fulcrum for future readiness, but our strategies to maintain pre-eminence are changing. In prior decades, we produced the most critical technologies. Now we must harness commercial applications in many areas. Hence, in addition to funding our Science and Technology program at the maximum authorized level, we have revitalized the SAB as a nexus linking the Air Force to other government agencies, commercial sectors, academe, and our allies. Through the Air Force Office of Scientific Research, we support about 3,000 senior researchers and 2,000 graduate students at universities, in industry, and in laboratories. We have also developed international data exchanges; research agreements; engineer/scientist exchanges; Foreign Comparative Test and Nunn Amendment Programs; and are committed to NATO research activities. These efforts keep us at the cutting edge of technological advancements and promote affordable solutions to aerospace problems. Finally, our approach to Research, Development, Test and Evaluation (RDT&E) is also changing. Vigorous growth in modeling and simulation capabilities is promoting better RDT&E at reduced cost.

Regional Warfighting Requirements

Modernization objectives to meet two major regional conflict (MRC) requirements must be understood in their strategic context. Decisions made today have 30 year implications. Regional threats may change radically. We probably will not have the luxury of a Desert Shield-type buildup. Next time, we may be fighting our way in, racing for control of footholds in one (or two) theaters. If we lose the race, the result will be a fait accompli or a long, costly war.

With these points in mind, Bottom-Up Review (BUR) conclusions depended on key modernization efforts to field highly leveraged forces early-on. These forces would: (1) secure a lodgment in theater, (2) blunt enemy progress, and (3) thereby lay abutments for a sea and air bridge over which follow-on forces would propagate initial success. Moreover, portions of the lead cadre must be prepared to swing to help reproduce decisive results in a second theater or deter a second aggressor. In sum, BUR conclusions depend on leveraging the capabilities of airpower, at sufficient operating tempos and with the right munitions, to defeat two enemies on opposite sides of the globe in less than two months. Within this context, we are focusing on the following priorities.

Rapid Global Mobility

The C-141 is tired! It will continue to serve through this decade, but it makes better economic sense to modernize with C-17s rather than extend the life of this aging workhorse. The once troubled C-17 is now a success story -- replacing the C-141 at lower operating costs while delivering C-5-type payloads into C-130-size airfields. This core airlifter underpins the nation's two-MRC strategy and is the U.S. Transportation Command's highest priority. C-17 production is ahead of schedule and the aircraft made its operational debut in Vigilant Warrior. We are also evaluating augmentation using a Non-Developmental Airlift Aircraft with a decision pending in 1995. We are also upgrading our air refueling

and theater airlift fleets to increase flexibility, better support our sister Services, and enhance viability in the next century.

Air Superiority

The initial battle for air superiority may well determine the course of the next MRC. Our early deploying fighter forces may arrive outnumbered to engage the full weight of the enemy's air forces, missiles forces, and surface-to-air defenses -- all supported by robust command and logistical infrastructures. This is why the F-22 is our top modernization objective. Modern air battles tend to be cataclysmic. An initial disadvantage can quickly cascade into outright defeat with profound consequences for the progress of a war. Air superiority provides freedom of maneuver so ground, air, and naval forces can operate with impunity to end conflicts quickly and decisively. It is fundamental to the safe arrival and resupply of forces. It is essential for protection of high-value aircraft that help achieve information dominance, such as JSTARS and AWACS. And to ensure success of all other offensive operations, it must extend deep into enemy territory.

The Air Force has ensured American fighting forces have had air superiority since Kasserine Pass in the spring of 1943. We must continue this record in the 21st century. Many foreign fighters are now at parity with the F-15. The F-15 is vulnerable to surface-to-air missiles (SAMs), and it may not win the air battle beyond the next decade. The F-22's stealth characteristics, supersonic cruise, high maneuverability, and advanced avionics all provide the qualitative edge required to fight outnumbered against future opponents and win. The ability to penetrate at the time and place of our choosing, and to achieve first look / first shot / first kill decisions, underwrites the capabilities of all follow-on forces in an MRC. Finally, the F-22 will penetrate enemy defenses unassisted in a strike role once the contest for air superiority is decided.

A second essential component of air superiority is suppression of enemy air defenses (SEAD), which protects aviation forces that do not possess stealthy characteristics. By upgrading a portion of our F-16s with HARM targeting systems, we will more than offset the retirement of the aging F-4G Wild Weasel. Finally, proliferation of missiles and weapons of mass destruction (WMD) presents the most serious long-term threat to aerospace superiority. Our modernization objectives aim at neutralizing these weapons before launch and very early in flight. This will reduce stress on mid-course and end-game systems provided by our sister Services. Moreover, by neutralizing WMD on enemy territory, we can create powerful incentives not to use it in the first place, better protect our forces if it is used, and thus shift our emphasis from deterrence by threat of punishment to deterrence by defense.

Surface Attack

The third vital requirement in an MRC is denying enemy power projection on land -- and again, early successes reduce the costs of all subsequent operations. Our modernization objectives are centered in three areas. First, we must deliver massive firepower beginning in the opening hours of a war through a balanced approach to bomber modernization. The B-2's stealth and large payload will significantly improve flexibility and offensive striking power. Six B-2s, for example, are more lethal and survivable than all land and sea-based airpower used during the 1986 Libya raid. While the B-2 is the head of the fleet, the B-1B is the backbone -- with its greater numbers, larger payload, and higher speed. The B-1 recently demonstrated its capability to sustain wartime operating rates in an Operational Readiness Assessment, greatly surpassing the required mission capable rate. Finally, the venerable B-52H will continue to provide an economical means to conduct standoff precision attacks or direct attacks. Acting in concert, the bomber force will provide critical leverage in an MRC and a responsive swing capability to deter or respond to a second conflict. By downsizing the bomber force to an acceptable level in the near

term, we have generated savings to help fund upgrades that will enable us to deploy 100 bombers with enhanced capabilities by the end of the decade.

Second, we are modernizing theater strike and multirole platforms. The principal strength of these forces is their ability to sustain high combat tempos over long periods to maximize fire and steel on target. We are upgrading subsystems to extend life and enhance capabilities, but no new acquisitions are planned for a decade. Soon after, we must transition Joint Advanced Strike Technology (JAST) programs to make the next generation strike aircraft a reality. The ultimate success of JAST is closely tied to the F-22. F-22 production will provide technological leverage to help ensure JAST technologies are transitioned in a timely and affordable way. Conversely, F-22 delays would create a fiscal bow wave in the next century as the nation attempts to field new fighter and strike aircraft simultaneously.

Third, the Air Force has made a precision commitment. In 1944, it took 108 B-17s dropping 648 bombs to destroy a target. In Vietnam, similar targets required 176 bombs. Now, a single precision guided munition (PGM) can do the job. This is how the F-117 destroyed 40 percent of all strategic targets while flying only 2 percent of all strategic sorties during Desert Storm. Consequently, the Air Force has tripled the number of precision-capable platforms since the war, boosted PGM inventories 25 percent above pre-war levels, and is developing new generations of PGMs with enhanced accuracy, standoff, and adverse weather capabilities.

Dominating the Information Environment

Global Reach and Global Power are synonymous with Air Force operations worldwide, but the 1990s have seen the ascendance of another Air Force role -- dominating the information environment -- by providing global situational awareness and denying or corrupting our adversary's. Information operations are no longer a cost of doing business, but presence and warfighting methods in their own right. They substitute for force in some cases, and increasingly serve as a multiplier when force is required. As principal operator of our nation's air and space information-gathering systems, we have stepped up to modernization challenges on behalf of joint warfighters.

This year saw development of an objective C^4I environment for the 21st century and a map to get there. Our proposal is not a grand design, but a set of nested strategic plans that will allow rapid migration toward the goal -- harmonizing efforts throughout DoD. The objective is a global network with a worldwide information plug-in, common tactical pictures, bandwidth on-demand for any application, in any form, to and from anywhere, allowing all warfighters to access the information they need.

This vision is already coalescing in the field. Our Space Warfare Center is bringing operations and support together from all services to make space support to the joint warfighter routine. We glimpsed what we are looking for in Haiti, where our space teams deployed in support of the Joint Force Commander (JFC). For the first time, the JFC, National Military Command Center, and Service Operation Centers viewed a common tactical picture -- displaying everything from readiness data to imagery and weather at the click of a button. The Air Force is making similar strides developing conceptual, doctrinal, and legal positions on information warfare (IW); incorporating IW into education, training and exercise programs; and developing operational capabilities. One important step was establishment of the Air Force Information Warfare Center in 1993.

Modernization of information systems proceeds apace. Our Space Test Program successfully flew 23 research experiments this year; we now have a fully operational constellation of 24 Global Positioning System (GPS) satellites; and the first MILSTAR supported joint operations in Haiti. Our airborne information systems are also being modernized, netted to each other, and to ground and space systems to

produce large force-multiplying effects. Correspondingly, we are modernizing our users to make faster and better use of information. GPS modifications continue on all Air Force aircraft. Targeting information is finding its way from space and airborne sensors directly to the cockpit or smart weapon. Finally, our new mission support system is pulling together operational, weather, intelligence, threat data, and command and control information from all sources into portable work-stations for Army and Air Force warfighters. These are precisely the advances we need to fully exploit the capabilities of a much smaller military.

Space Launch

Information dominance depends upon affordable access to space. We turned the corner in space launch this year. 1994 saw more than 20 successful launches, continuation of our Delta launch vehicle's 100 percent success story, and Titan IV returned to flight. We also submitted a space launch plan to the President and Congress to evolve our expendable launch systems and received funding for the first booster replacement in 30 years. Finally, we are enhancing national capabilities through cooperation with industry at Vandenberg AFB, California, and Cape Canaveral, Florida. This progress represents an essential beginning only. America's leadership in commercial space launch has declined from almost 100 percent of market share in the 1980s to 32 percent this year. We must continue to build on recent successes or consequences for military and economic security could be serious.

THE WAY AHEAD

Across the spectrum of peace and conflict, the Air Force exemplifies the ascendant role of air and space power in American security. Air and space power are fundamental to building U.S. influence jointly and globally through presence. Likewise, air and space power increasingly underpin national capabilities to conduct decisive combat operations worldwide. Growing tension between expanding security requirements and dwindling resources will continue to challenge us in each of our objective areas: remaining engaged, supporting our people, preserving combat readiness, and building for the future. But Air Force priorities within each area are clear and our plans to achieve them viable.

It is also clear, however, this tension magnifies the importance of two imperatives for the future. First, solutions to our nation's security needs must be joint solutions. The Air Force strives to build a team within the team. Secondly, as technology and threats evolve so must our views on strategy, doctrine, and roles and missions. The declining size of our military demands abandonment of the business as usual mindset. Innovative thinking is key to reducing duplication and getting the most capability from our defense budget. To paraphrase General Shalikashvili, the combination of diminishing resources and a rapidly changing threat environment makes inter-service trust more difficult and more important.

Let me conclude with a salute to our Air Force men and women. We have come a long way from Kitty Hawk to Vigilant Warrior, and during that journey, we have raised the sight of all mankind to the skies and to the stars. People did that. If I have learned anything in the last two years, it is that a strong American defense comes not from the building of gadgets but from the building of character. Every day, Air Force people are rewriting the script that reads: duty, honor, country. Eight-hundred-thousand-plus airmen, uniformed and civilian, active and reserve, serving at 191 installations spanning the globe, have committed their lives in our nation's service. With them lies the promise we will meet the challenges ahead and go beyond -- casting America's watchful eye upon the globe, wielding her sword and shield, and lending her helping hand.

Sheila E. Widnall
Secretary of the Air Force

REPORT OF THE CHAIRMAN OF THE RESERVE FORCES POLICY BOARD

Thank you for this opportunity to present a summary of the Reserve Forces Policy Board's observations and recommendations of the past year. The Board's annual report will present a comprehensive view of key issues and programs, and include a summary of the Board's positions and recommendations on specific issues.

The Board, acting through the Assistant Secretary of Defense for Reserve Affairs, is the principal policy adviser to the Secretary of Defense on matters relating to the Reserve components (10 U.S.C. Section 175(c)). Representatives from each of the Service Secretariats, Active components, and Reserve components serve as members of the Board. The Board offers independent advice and reports on Reserve strengths, readiness, and other critical Reserve component issues.

During 1994, we focused on roles and missions, readiness, accessibility, and peacetime use of Reserve components. Planning for major regional conflicts and operations other than war (such as peacekeeping, humanitarian assistance, and domestic disaster relief) became a major thrust of the military community. Missions required integrated Active and Reserve forces to provide adequate responses to the changing world order. Units from this capability-based force can be appropriately mixed and matched to meet any challenge. The resulting force mix is crucial in determining Reserve component capabilities and limitations into the next century.

To respond to post-Cold War risks, dangers, opportunities, and challenges, a vision was developed for the Reserve components. The vision, as accepted by the Secretary of Defense, seeks an integrated total force in which the Reserve components are active participants in facing the full spectrum of new challenges to national security. Reserve components must be capable, accessible, affordable, and relevant.

- Capable-- Reserve components must have a clear mission and be organized, equipped, trained, and sustained to perform their roles, missions, and functions. Additionally, there must be clear, measurable standards to assess their capability.
- Accessible -- Reserve component members or units must be accessible for active duty, voluntarily or involuntarily, to meet operational requirements. Policy and regulations are among the barriers affecting Reserve component accessibility. Strategies must be implemented to reduce or eliminate the impact of these barriers.
- Affordable -- Reserve components must be recognized as a cost-effective, efficient force which provides mission capabilities on demand. Maintaining mission capabilities in the Reserve components should cost less than maintaining readiness in the Active components if the principle of compensating leverage is applied.
- Relevant -- Reserve components must be highly trained, have modern equipment, be fully integrated with Active component forces, be sized and shaped to meet future war fighting and domestic needs, and provide strategic insurance for future requirements.

Development of the vision for the Reserve components establishes the Board as a key partner in the drive to transition Reserve component forces from being ready if called to being available and ready when called.

Accompanying this vision is a model called Task Force Tomorrow, which capitalizes on the use of Reserve component support personnel (including linguists, engineers, and medical assets) in the Southern Command (SOUTHCOM) area of responsibility (Panama and areas of SOUTHCOM). A minimum staff administers and controls units rotating in and out of the project site. The Board endorsed expanding this concept to support any long term operations that provide a training benefit.

Under direction of the Secretary of Defense, the Board studied the use of Reserve component intelligence assets and identified the following key challenges and barriers that inhibit the enhanced peacetime use of these assets: recruiting and retention, accessibility, full-time manning, bringing the mission to the reservists, end strength, resourcing, lack of centralized management, organizational culture, and lack of jointness. We recommended five actions: (a) establish a Department of Defense-level clearing house for matching requirements to assets; (b) capture unit and personnel capabilities on a data base; (c) provide commanders in chief the flexibility to use existing authorized funds to meet peacetime intelligence requirements using Reserve component assets; (d) focus on operational training opportunities during inactive duty training and annual training; and (e) provide flexibility in the times in which inactive duty training and annual training can be performed. The Secretary of Defense accepted the recommended actions and directed his staff to develop an implementation plan.

In 1994, the Board composition was expanded to include an Active component Marine Corps officer and a representative of the Joint Staff. The congressionally approved Board structure is unique in its representation of the Reserve components in national defense matters.

The Board deliberated several concerns which focused on the need for Reserve component issues to be considered during the 1995 Base Realignment and Closure (BRAC) process. As a result of the ongoing dialogue with the Office of the Secretary of Defense, several changes occurred that will assure that adequate consideration is given to Reserve component issues. Additionally, the Services initiated actions to ensure that Reserve component concerns are addressed during their phase of the BRAC process.

Numerous high-technology initiatives designed to improve the scope and intensity of training are now in place within the military structure. Existing and future simulation training devices and their applications should be fully used and adequately funded for Reserve components. Department of Defense training facilities and resources should be accessible and available for joint use by both Active and Reserve components.

Accessibility continues to be a major concern for the Reserve components. Early access to Reserve component forces is essential in order to conduct simultaneous contingency operations, support domestic emergencies, and provide international humanitarian support.

Lessons learned from Operation Desert Shield/Storm and the increased use of Reserve personnel assets for subsequent contingencies and missions substantiate the need to become more in tune with the family, employer, and Reservist. When a nation calls on certain citizens to abandon their private lives for an extensive period of time to act on its behalf, that nation should protect and preserve the private lives of those citizens. In that spirit, the Board supports efforts to provide (a) tax incentives for employers of Reservists and Reservists who are self-employed, and (b) mobilization insurance for Reservists who lose income as a result of being placed on active duty.

World events and the post-Cold War period have brought uncertainty, significant change, and transition. Accordingly, the military structure is affected by these events -- personnel downsizing is occurring, funds are shrinking, and equipment resources are lessening. The Active component forces are projected to be smaller. As such, the Reserve components will play a pivotal role in the proper sizing of the military structure during the next several decades.

The Reserve Forces Policy Board's annual report, Reserve Component Programs Fiscal Year 1994, is scheduled for publication in March 1995.

/s/
Terrence M. O'Connell
Chairman

Forwarded to the
Secretary of Defense
/s/
Deborah R. Lee
Assistant Secretary of Defense
for Reserve Affairs

APPENDIX B

BUDGET TABLES

BUDGET TABLES

Department of Defense — Budget Authority by Appropriation[a]
(Dollars in Millions)

Table B-1

	FY 1990	FY 1991[b]	FY 1992[b]	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Current Dollars								
Military Personnel	78,876	84,213	81,221	75,974	71,365	70,595	68,697	67,492
Operation and Maintenance (O&M)	88,309	117,234	93,791	89,172	88,341	94,381	91,992	90,590
Procurement	81,376	71,740	62,952	52,789	44,141	44,619	39,409	43,464
Research, Development, Test, and Evaluation (RDT&E)	36,459	36,196	36,628	37,974	34,567	35,438	34,332	32,554
Military Construction	5,130	5,188	5,254	4,554	6,009	5,481	6,573	4,488
Family Housing	3,143	3,296	3,788	3,941	3,501	3,387	4,125	4,335
Defense-wide Contingency						-703	-72	-30
Revolving & Management Funds	566	2,701	4,587	4,503	4,354	297	1,703	506
Trust & Receipts	-832	-44,329	-5,733	-435	-809	-763	-334	-507
Deduct, Intragovt Receipt	-27	-29	-550	-1,069	-104	-124	-369	-184
Total, Current $	**292,999**	**276,208**	**281,883**	**267,402**	**251,364**	**252,608**	**245,995**	**242,808**
Constant FY 1996 Dollars								
Military Personnel	95,393	97,494	91,332	81,894	75,028	72,375	68,697	65,568
O&M	105,965	131,339	104,197	96,247	92,677	97,081	91,992	88,032
Procurement	95,871	82,156	70,318	57,503	46,803	45,957	39,409	42,198
RDT&E	43,060	41,263	40,683	41,189	36,584	36,406	34,332	31,706
Military Construction	6,051	5,952	5,873	4,961	6,369	5,643	6,573	4,358
Family Housing	3,721	3,739	4,148	4,271	3,703	3,489	4,125	4,210
Defense-wide Contingency						-724	-72	-29
Revolving & Management Funds	672	3,074	5,075	4,857	4,598	302	1,703	492
Trust & Receipts	-988	-50,446	-6,334	-469	-856	-786	-334	-493
Deduct, Intragovt Receipt	-32	-33	-608	-1,154	-111	-128	-369	-179
Total, Constant $	**349,715**	**314,537**	**314,684**	**289,299**	**264,797**	**259,695**	**245,995**	**235,863**
% Real Growth								
Military Personnel	-1.0	2.2	-6.3	-10.3	-8.4	-3.5	-5.1	-4.6
O&M	-1.1	23.9	-20.7	-7.6	-3.7	4.8	-5.3	-4.3
Procurement	-0.8	-14.3	-14.4	-18.2	-18.6	-1.8	-14.3	7.1
RDT&E	-6.6	-4.2	-1.4	1.2	-11.2	-0.3	-5.9	-7.7
Military Construction	-13.7	-1.7	-1.3	-15.5	28.4	-11.4	16.5	-33.7
Family Housing	-7.5	0.5	11.0	3.0	-13.3	-5.8	18.2	2.0
Total	**-2.2**	**-10.1**	**0.0**	**-8.1**	**-8.5**	**-1.9**	**-5.3**	**-4.1**

[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 1990[b]	FY 1991[b]	FY 1992[b,c]	FY 1993[c]	FY 1994	FY 1995	FY 1996	FY 1997
Current Dollars								
Army	78,479	91,825	73,636	64,803	62,470	62,690	59,271	57,803
Navy	99,977	103,470	90,311	83,198	78,055	78,160	75,590	75,010
Air Force	92,890	91,257	82,340	79,146	74,575	74,449	72,576	72,777
Defense Agencies/ OSD/JCS	18,663	21,134	29,151	22,158	19,380	21,777	22,526	23,307
Defense-wide	2,989	-31,477	6,445	18,097	16,883	15,532	16,032	13,911
Total, Current $	**292,999**	**276,208**	**281,883**	**267,402**	**251,364**	**252,608**	**245,995**	**242,808**
Constant FY 1996 Dollars								
Army	93,879	105,314	82,379	70,028	65,793	64,378	59,271	56,149
Navy	119,310	117,814	100,851	89,978	82,192	80,368	75,590	72,869
Air Force	110,835	102,973	91,867	85,698	78,485	76,561	72,576	70,705
Defense Agencies/ OSD/JCS	22,163	24,225	32,415	24,013	20,482	22,403	22,526	22,632
Defense-wide	3,528	-35,789	7,172	19,582	17,845	15,984	16,032	13,508
Total, Constant $	**349,715**	**314,537**	**314,684**	**289,299**	**264,797**	**259,695**	**245,995**	**235,863**
% Real Growth								
Army	-2.3	12.2	-21.8	-15.0	-6.1	-2.2	-7.9	-5.3
Navy	-0.6	-1.3	-14.4	-10.8	-8.7	-2.2	-6.0	-3.6
Air Force	-4.6	-7.1	-10.8	-6.7	-8.4	-2.5	-5.2	-2.6
Defense Agencies/ OSD/JCS	-1.2	9.3	33.8	-25.9	-14.7	9.4	0.5	0.5
Defense-wide	28.6	-1,114.4	-120.0	173.0	-8.9	-10.4	0.3	-15.8
Total	**-2.2**	**-10.1**	**0.0**	**-8.1**	**-8.5**	**-1.9**	**-5.3**	**-4.1**

[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	16.4
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	17.8
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	4.6	80.2	18.8	12.6
1992	23.2	20.6	4.8	79.2	18.3	13.3
1993	22.4	17.9	4.4	82.1	18.0	12.2
1994	22.0	18.4	4.1	81.6	18.0	11.5
1995	21.9	16.9	3.7	83.1	18.2	11.0

[a]Federal, 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

	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		
Fiscal Year	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	2.8	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	59.2	15.0	2.5	5.0	5.6	7.6	11.1
1991	58.4	14.7	2.4	4.8	5.7	7.8	11.3
1992	55.9	13.7	2.2	4.5	5.3	7.5	11.1
1993	55.1	12.8	2.0	4.2	4.9	7.2	11.0
1994	55.0	12.3	1.8	3.9	4.4	6.7	11.0

[a]DoD civilian employment data excludes foreign nationals.

[b]Includes 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.

[c]Data reflects the federal government's recent shift to GDP for measuring total purchases of goods and services.

APPENDIX C

PERSONNEL TABLES

Military and Civilian Personnel Strength[a,b] (End Fiscal Year — In Thousands)

Table C-1

	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95[f]	FY 96[f]
Active Component												
Army	780.8	781.0	780.8	771.8	769.7	750.6	725.4	611.3	572.4	541.3	510.0	495.0
Navy	570.7	581.1	586.8	592.6	592.7	582.9	571.3	541.9	510.0	468.7	439.2	428.0
Marine Corps	198.0	198.8	199.5	197.4	197.0	196.7	195.0	184.6	178.4	174.2	174.0	174.0
Air Force	601.5	608.2	607.0	576.4	570.9	539.3	510.9	470.3	444.4	426.3	400.1	388.2
Total	**2151.0**	**2169.1**	**2174.1**	**2138.2**	**2130.2**	**2069.4**	**2002.6**	**1808.1**	**1705.1**	**1610.5**	**1523.3**	**1485.2**
Reserve Component Military (Selected Reserve)												
ARNG	440.0	446.2	451.9	455.2	457.0	437.0	441.3	426.5	409.9	396.9	387.0	373.0
Army Reserve	292.1	309.7	313.6	312.8	319.2	299.1	299.9	302.9	275.9	259.9	242.0	230.0
Naval Reserve	129.8	141.5	148.1	149.5	151.5	149.4	150.5	142.3	132.4	107.6	100.7	98.6
MC Reserve	41.6	41.6	42.3	43.6	43.6	44.5	44.0	42.3	41.7	40.7	41.0	42.0
ANG	109.4	112.6	114.6	115.2	116.1	117.0	117.6	119.1	117.2	113.6	115.6	109.5
Air Force Reserve	75.2	78.5	80.4	82.1	83.2	80.6	84.3	81.9	80.6	79.6	78.7	74.0
Total	**1088.1**	**1130.1**	**1150.9**	**1158.4**	**1170.6**	**1127.6[c]**	**1137.6[d]**	**1114.9**	**1057.7**	**998.3**	**965.0**	**927.0**
Civilian[e]												
Army	420.0	413.0	417.9	392.9	402.9	380.4	365.5	333.6	294.2	279.5	269.7	257.1
Navy	352.9	342.1	353.1	347.8	354.0	341.0	329.0	309.0	285.2	269.1	254.2	240.7
Air Force	263.9	263.2	264.3	253.2	260.6	248.9	232.7	214.4	201.7	196.5	190.1	184.4
DoD Agencies	92.4	94.0	97.8	96.3	99.3	102.5	117.5	149.0	155.8	155.6	153.0	146.5
Total	**1129.2**	**1112.3**	**1133.1**	**1090.2**	**1116.8**	**1072.8**	**1044.5**	**1006.1**	**936.9**	**900.7**	**866.9**	**828.6**

[a] As of September 30, 1994.
[b] Numbers may not add to totals due to rounding.
[c] Does 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.
[d] Does 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.
[e] Includes direct and indirect hire civilians.
[f] Planned.

U.S. Military Personnel in Foreign Areas (End Fiscal Year — In Thousands)

Table C-2

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92[b]	FY 93	FY 94[d]
Germany	254	254	247	250	251	249	249	228	203	134	105	86
Other Europe	70	73	75	75	73	74	71	64	62	54	44	41
Europe, Afloat	18	25	36	33	31	33	21	18	20	17	17	9
South Korea	39	41	42	43	45	46	44	41	40	36	35	37
Japan	49	48	47	48	50	50	50	47	45	48	46	45
Other Pacific	15	16	16	17	18	17	16	15	9	3	1	1
Pacific Afloat (Including Southeast Asia)	34	18	20	20	17	28	25	16	11	13	17	15
Latin America/ Caribbean	14	13	12	13	13	15	21	20	19	18	18 25	36[d]
Miscellaneous	27	25	20	26	27	29	13	160	39[a]	23		15
Total[c]	**520**	**511**	**515**	**525**	**524**	**541**	**510**	**609**	**448**	**344**	**308**	**287**

[a] Includes 118,000 shore-based and 39,000 afloat in support of Operation Desert Storm.
[b] As of September 30, 1994.
[c] Numbers may not add to totals due to rounding.
[d] Includes 17,500 in Haiti and 4,000 afloat in the Western Hemisphere.

APPENDIX D

FORCE STRUCTURE TABLES

FORCE STRUCTURE TABLES

Department of Defense Strategic Forces Highlights[a]

Table D-1

	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Land-Based ICBMs[b]									
Minuteman II (1 warhead each) plus Minuteman III (3 warheads each)	950	950	950	880	737	625	535	530	530
Peacekeeper (10 warheads each)	50	50	50	50	50	50	50	50	50
Heavy Bombers (PAI)[c]									
B-52G/B-52H	220	187	151	129	110	64	74	56	56
B-1B	90	90	89	84	84	84	60	60	60
B-2	0	0	0	0	0	3	6	9	10
Submarine-Launched Ballistic Missiles[b]									
Poseidon (C-3) and Trident (C-4) missiles on pre-Ohio-class submarines	384	368	352	176	96	48	0	0	0
Trident (C-4 and D-5) missiles on Ohio-class submarines	192	216	264	288	312	336	360	384	408
Strategic Defense Interceptor Aircraft (PAI)[d]									
Active Aircraft	36	18	18	0	0	0	0	0	0
Air National Guard Aircraft	216	216	216	216	216	150	150	150	150

[a]Force levels shown are for the ends of the fiscal years in question. Inventory levels for future years reflect the force structures supported by the FY 1995 budget. The actual force levels for FY 1996 and FY 1997 will depend on future decisions.
[b]Number of operational missiles. Not in maintenance or overhaul status.
[c]PAI = Primary aircraft inventory for active and reserve components. The numbers shown reflect only combat coded and training coded PAI aircraft and not development/test aircraft. Total inventory (including aircraft in depot maintenance, attrition and reconstitution reserve) will be higher. By FY 1997, most bombers will be devoted primarily to conventional warfare.
[d]The numbers shown reflect only combat coded PAI aircraft.

Department of Defense
General Purpose Forces Highlights

Table D-2

Land Forces	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Army Divisions								
Active	18	16	14	14	12	12	10	10
Reserve	10	10	10	8	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[a]								
Active	8	8	7	7	7	6	3	3
Reserve	27	27	27	24	22	22	22	18
Army Special Forces Groups								
Active	5	5	5	5	5	5	5	5
Reserve	4	4	4	4	2	2	2	2
Army Ranger Regiment	1	1	1	1	1	1	1	1
Tactical Air Forces (PAI/Squadrons)[b]								
Air Force Attack and Fighter Aircraft								
Active	1,722/76	1,560/71	1,254/57	1,131/56	966/53	936/53	900/51	912/51
Reserve	873/43	861/43	924/43	816/42	639/39	567/38	489/38	504/38
Conventional Bombers								
B-52G	33	33	33	33	0	0	0	0
Navy Attack and Fighter Aircraft								
Active	622/57	654/59	678/61	610/56	590/50	528/44	504/37	420/35
Reserve	97/9	116/10	116/10	116/10	90/7	38/3	38/3	38/3
Marine Corps Attack and Fighter Aircraft								
Active	368/24	368/26	346/24	330/23	320/22	332/23	332/23	332/23
Reserve	84/8	84/8	72/6	72/6	68/5	60/5	60/5	48/4
Naval Forces								
Strategic Forces Ships	39	40	34	24	19	16	17	18
Battle Forces Ships[c]	410	393	357	342	315	303	301	297
Support Forces Ships	66	62	57	51	41	35	29	25
Reserve Forces Ships	31	32	19	18	16	19	18	18
Total Ship Battle Forces	**546**	**527**	**467**	**435**	**391**	**373**	**365**	**358**
Mobilization Category B: Surface Combatants[c]								
Mine Warfare Ships	19	16	16	15	0	1	3	8
Local Defense Mine Warfare Ships and Coastal Defense Craft	0	0	0	2	9	15	18	15
Total Other Forces[d]	19	16	16	17	9	16	21	23

[a] Includes the Eskimo Scout Group and the armored cavalry regiments.
[b] Primary aircraft inventory (combat coded aircraft only).
[c] Training carrier included in Battle Forces Ships.
[d] Excludes auxiliaries and sealift forces.

Department of Defense Airlift and Sealift Force Highlights

Table D-3

	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Intertheater Airlift (PAI)[a]									
C-5	110	109	109	109	109	107	104	104	104
C-141	234	234	234	234	214	214	199	187	163
KC-10[b]	57	57	57	57	57	54	54	54	54
C-17	0	0	0	0	2	9	17	22	24
Intratheater Airlift (PAI)[a]									
C-130	468	460	461	417	380	410	416	428	404
Sealift Ships, Active[c]									
Tankers	29	28	20	20	20	18	18	18	18
Cargo	40	40	39	40	40	51	51	51	51
Sealift Ships, Reserve									
RRF[d]	93	96	96	97	97	93	77[e]	80	88

[a]PAI — Primary aircraft inventory for active and reserve components. The numbers shown reflect only combat support and industrial funded PAI aircraft and not development/test aircraft.

[b]Includes 37 KC-10s allocated to an airlift role.

[c]Includes fast sealift, afloat prepositioning, and common-user (charter) ships.

[d]RRF — Ready Reserve Force. Vessels assigned to 4-, 5-, 10-, or 20-day reactivation readiness groups. Excludes RRF ships tendered to the Military Sealift Command.

[e]Includes 29 ships below readiness standards.