Annual Report

to the President and the Congress

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Secretary of Defense

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MESSAGE OF THE SECRETARY OF DEFENSE

THE DANGERS OF THE POST-COLD WAR WORLD

Contrary to the hopes of many and predictions of some, the end of the Cold War did not bring an end to international conflict. The most daunting threats to our national security that we faced during the Cold War have gone away, but they have been replaced with new dangers.

During the Cold War, we faced the threat of nuclear holocaust; today, we face the dangers attendant to the proliferation of weapons of mass destruction. Nuclear weapons in the hands of rogue nations or terrorists are especially dangerous because, unlike the nuclear powers during the Cold War, they might not be deterred by the threat of retaliation.

During the Cold War, we faced the threat of Warsaw Pact forces charging through the Fulda Gap and driving for the English Channel; today, we face the dangers attendant to the instability in Central and Eastern Europe resulting from the painful transition to democracy and market economies now underway there. This instability could lead to civil wars or even the reemergence of totalitarian regimes hostile to the West.

During the Cold War, we faced the threat of the Soviet Union using third world nations as proxies in the Cold War confrontation; today, we face the dangers arising from an explosion of local and regional conflicts, unrelated to Cold War ideology, but rooted in deep-seated ethnic and religious hatreds and frequently resulting in horrible suffering. These conflicts do not directly threaten the survival of the United States, but they can threaten our allies and our vital interests, particularly if the regional aggressors possess weapons of mass destruction.

The new post-Cold War dangers make the task of protecting America's national security different and in some ways more complex than it was during the Cold War. Our task of planning force structure is more complex than when we had a single, overriding threat. Previously, our force structure was planned to deter a global war with the Soviet Union, which we considered a threat to our very survival as a nation. All other threats, including regional threats, were considered lesser-but-included cases. The forces we maintained to counter the Soviet threat were assumed to be capable of dealing with any of these lesser challenges. Today, the threat of global conflict is greatly diminished, but the danger of regional conflict is neither lesser nor included and has therefore required us to take this danger explicitly into account in structuring our forces. These risks are especially worrisome because many of the likely aggressor nations possess weapons of mass destruction. Additionally, our defense planning must provide a hedge for the possibility of a reemergence at some future time of the threat of global conflict.

Also, our task of building alliances and coalitions is more complex in the absence of a global threat. With the collapse of the Soviet Union and the dissolution of the Warsaw Pact, the raison d'etre of NATO, for example, had to be reconsidered from first principles in order to relate its missions to the new dangers. Also, new coalitions and partnerships needed to be formed with the newly emerging democratic countries. In building such international coalitions, we understand that the United States is the only country with truly global interests and a full range of global assets -- military, economic, and political. Thus, we are the natural leader of the international community. However, even the United States cannot achieve its goals without the active assistance of other nations. No state can act unilaterally and expect to fully address threats to its interests, particularly those that are transnational in character.

Thus the new post-Cold War security environment requires a significant evolution in our strategy for managing conflict, and it requires new and innovative defense programs and management philosophies to implement that strategy.

MANAGING POST-COLD WAR DANGERS: PREVENT, DETER, AND DEFEAT

Today, our policy for managing post-Cold War dangers to our security rests on three basic lines of defense. The first line of defense is to prevent threats from emerging; the second is to deter threats that do emerge; and the third, if prevention and deterrence fail, is to defeat the threat to our security by using military force. A renewed emphasis on the first line of defense -- preventive defense -- is appropriate in dealing with the post-Cold War dangers and is a significant departure from our Cold War defense policies, where the primary emphasis was on deterrence.

Preventive Defense

During World War II, all of America's defense resources were dedicated to defeating the threat posed by Japan and Germany and their allies. That war ended with a demonstration of the incredibly destructive power of atomic weapons. Thus, when the Cold War began, the fundamental predicate of our defense strategy was that fighting a nuclear war was an unacceptable proposition -- unacceptable from a military as well as a moral standpoint. So we formulated a strategy of deterrence -- a logical response to the single overarching threat we faced during that era: an expansionist Soviet Union heavily armed with nuclear and conventional weapons. This strategy meant that the primary responsibility of previous Secretaries of Defense was making sure that we had adequate forces -- both nuclear and conventional -- to provide unambiguous deterrence.

Today, we continue to deter potential adversaries by maintaining the best military forces in the world. But in the post-Cold War era, the Secretary of Defense and the Department also devote significant efforts to working on preventive defense. Preventive defense seeks to keep potential dangers to our security from becoming full-blown threats. It is perhaps our most important tool for protecting American interests from the special dangers that characterize the post-Cold War era. When successful, preventive defense precludes the need to deter or fight a war.

Preventive defense is nothing new -- it has been a central idea of military strategists for over two thousand years. Indeed, it has been an important strand in United States defense policy that has been used before with notable success. After World War II, the United States and its allies undertook significant efforts to prevent a future war by holding out a hand of reconciliation and economic assistance to our former enemies, Japan and Germany. These efforts were an outstanding success, especially the Marshall Plan in Europe. The economies of Japan and Western Europe rebounded, democracy grew deep roots, and our military cooperation and strategic alliances flourished. But Joseph Stalin turned down the Marshall Plan for the Soviet Union and the Eastern European countries that he dominated, and our preventive efforts with the Soviet Union failed.

Instead, the Cold War ensued, and for more than 40 years the world faced the threat of global war and even nuclear holocaust. Having failed to prevent the conditions for conflict, the United States concentrated on the second line of defense -- deterrence. Over the next 40-plus years, deterrence worked, and World War III was averted. Finally, largely as a result of fundamental flaws in its political and economic system, the Soviet Union collapsed, and many of the New Independent States sought to establish democratic governments and free-market systems. The outcome of that unprecedented transformation is still uncertain, but today the threat of worldwide nuclear conflict has receded, former

Warsaw Pact nations are seeking to join NATO, and Russia and the United States are cooperating in both economic and security programs.

Clearly, deterrence and warfighting capability still have to remain central to America's post-Cold War security strategy, but they cannot be our only approaches to dealing with the threats to our security. Instead, the dangers facing us today point us towards a greater role for preventive defense measures. Just as preventive defense measures helped shape our security environment following World War II, preventive measures can help us deal with post-Cold War dangers. Indeed, the end of the Cold War allows us to build on the types of preventive measures successfully introduced by George Marshall in Western Europe, and extend them to all of Europe and the Asia-Pacific region.

In addition to maintaining strong alliances with our traditional allies in NATO and the Asia-Pacific region, our preventive defense approach consists of four core activities:

- Working cooperatively with Russia, Ukraine, Kazakstan, and Belarus to reduce the nuclear legacy of the former Soviet Union and to improve the safety of residual weapons.
- Establishing programs to limit the proliferation of weapons of mass destruction.
- Encouraging newly independent and newly democratic nations to restructure their defense establishments to emphasize civilian control of their military, transparency in their defense programs, and confidence-building measures with their neighbors.
- Establishing cooperative defense-to-defense relationships with nations that are neither full-fledged allies nor adversaries, but who are, nonetheless, important to our security.

Investing in these programs today, which my predecessor Les Aspin aptly dubbed "defense by other means," saves us both blood and treasure tomorrow.

Proliferation is a prime example. The possession of nuclear or other weapons of mass destruction by a potential aggressor not only increases the potential lethality of any regional conflict, but the mere possession of the weapons by the potential aggressor increases the chances of conflict arising in the first place. In other words, it is not just that a nuclear-armed Iraq or North Korea would be a more deadly adversary in a war -- it is that with nuclear weapons they are likely to be harder to deter and more likely to coerce their neighbors or start a war in the first place. The Framework Agreement with North Korea is a prime example of our counterproliferation program at work. The dangerous North Korean nuclear program has been frozen since October 1994, when the Framework Agreement was signed.

Another example of preventive defense is our Cooperative Threat Reduction, often referred to as the Nunn-Lugar Program. Under this program, we have assisted the nuclear states of the former Soviet Union to dismantle thousands of nuclear warheads and destroy hundreds of launchers and silos.

Reducing the nuclear threat to the United States and stopping proliferation are only the most dramatic examples of why prevention is so important to our security. This Annual Defense Report describes in detail many programs we have initiated to strengthen our preventive defense.

Deterrence

No matter how hard we work on preventive defense, we cannot be sure that we will always be successful in preventing new threats from developing. That is why we must deter threats to our security, should they emerge. The risk of global conflict today is greatly reduced from the time of the Cold War, but as long as nuclear weapons still exist, some risk of global conflict remains. The United States, therefore, retains a reduced but highly effective nuclear force as a deterrent. These forces (as well as those of Russia) have

been reduced significantly, consistent with the START I Treaty, and will be further reduced when Russia ratifies the START II Treaty.

Similarly, to deter regional conflict, we must maintain strong, ready, forward-deployed, conventionally-armed forces; make their presence felt; and demonstrate the will to use them. While the diminished threat of global conflict has allowed us to reduce U.S. force structure accordingly, the increased risk of regional conflict places sharp limits on how far those reductions can go. Today, the size and composition of American military forces, consistent with the Bottom-Up Review conducted in 1993, are based on the need to deter and, if necessary, fight and win, in concert with regional allies, two major regional conflicts nearly simultaneously. The guiding principle is that the United States will fight to win, and to win decisively, quickly, and with minimum casualties.

This principle requires us to maintain a force structure today of about 1.5 million active duty personnel and 900,000 reserve personnel. These forces are organized into 10 active Army divisions, 15 Army National Guard enhanced readiness brigades, and 8 National Guard divisions; 20 Air Force wings (including 7 reserve wings); 360 Navy ships, including 12 aircraft carriers; and 4 Marine divisions (including 1 reserve division). Equally important to the size of the force is the requirement to maintain a commanding overseas presence, including 100,000 troops in Europe and about the same number in the Pacific, all in a high state of readiness. Our overseas presence not only deters aggression, it also improves coalition effectiveness in the event deterrence fails, demonstrates U.S. security commitments, provides initial crisis response capability, and underwrites regional stability. Strong deterrence also requires us to maintain prepositioned equipment in the Persian Gulf, the Indian Ocean, Korea, and Europe and carrier task forces and Marine Expeditionary Units afloat, able to move quickly to any crisis point. And finally, it requires that we keep our forces in the United States in a high state of readiness, and that we have the lift capability to transport them and their equipment rapidly to distant theaters. Having the capability to deploy forces quickly to a crisis decreases the likelihood that they will actually have to be used and increases their chances for success if force is necessary. Our planning involves the extensive use of well-trained Reserve Component forces. Fifteen Army National Guard brigades and many combat support reserve units will be maintained at a high readiness level to allow their use at early stages in military operations. The rest are intended to be used as follow-on forces available for later deployment in longer-term contingencies.

Those are the requirements that go with the ability to fight and win, in concert with regional allies, two nearly simultaneous major regional conflicts. U.S. forces today meet these requirements. While being able to fight and win is essential, that ability alone cannot deter conflict. Deterrence stems from military capability coupled with political will, both real and perceived; credibility is as important to deterrence as military capability. Deterrence of regional conflict failed, for example, in 1950 when North Korea doubted American political will. Some World War II veterans had to turn around and return to the Far East to reassert that political will, at a very high price. Today, American forces in the region serve as a visible reminder of our willingness and capability to help defend our South Korean allies.

In 1990, deterrence of regional conflict failed again when Iraq doubted our political will to defend Kuwait and Saudi Arabia. We demonstrated that will through a costly but highly successful war to evict Iraqi forces from Kuwait. In contrast, deterrence succeeded in October 1994 when Iraq moved forces down to the Kuwaiti border a second time. This time, the United States demonstrated political will by rapidly deploying additional U.S. military forces to the Gulf. Within a few days after the Iraqi forces had moved to the Kuwaiti border, we had deployed 200 fighter aircraft, an armored brigade, a Marine Expeditionary Unit, and a carrier battle group to the theater. These forces created in a few days a presence that took many weeks to assemble in 1990. Faced with that presence and the lessons of Operation Desert Storm,

Saddam Hussein sent his brigades back to their barracks. We achieved deterrence through the capability to rapidly build up a highly capable force, coupled with the credible political will to use that force.

Defending U.S. Interests Through Use of Military Force

Deterrence can sometimes fail, however, particularly against an irrational or desperate adversary, so the United States must be prepared to actually use military force. Use of force is the method of last resort for defending our national interests and requires a careful balancing of those interests against the risks and costs involved. The key criteria are whether the risks at stake are vital, important, or humanitarian.

If prevention and deterrence fail, vital U.S. interests can be at risk when the United States or an ally is threatened by conventional military force, by economic strangulation, or by the threat of weapons of mass destruction. These threats to vital interests are most likely to arise in a regional conflict and, by definition, may require military intervention.

In contrast, military intervention in ethnic conflicts or civil wars, where we have important, but rarely vital, interests at stake, requires the balancing of those interests against the risks and costs involved. In general, any U.S. intervention will be undertaken only after thorough consideration of the following critical factors: whether the intervention advances U.S. interests; whether the intervention is likely to accomplish U.S. objectives; whether the risks and costs are commensurate with the U.S. interests at stake; and whether all other means of achieving U.S. objectives have been exhausted. The United States chose not to intervene as a ground combatant in the war in Bosnia and Herzegovina because the risks and costs were too high when weighed against our interests. This decision was made by two successive administrations for essentially the same reasons. However, after successful American diplomacy and NATO military force reshaped the situation and the risks, we made the decision to participate, not as a combatant, but in the NATO peace implementation force.

The bottom line is that the United States is a global power with global interests, and as President Clinton has said, "Problems that start beyond our borders can quickly become problems within them." American leadership, global presence, and strong armed forces can help keep localized problems from becoming our problems, and protect us if they do. At the same time, there are limits to what the United States and its forces can or must do about problems around the globe. As the President said:

"America cannot and must not be the world's policeman. We cannot stop war for all time, but we can stop some wars. We cannot save all women and children, but we can save many of them. We can't do everything, but we must do what we can. There are times and places where our leadership can mean the difference between peace and war, and where we can defend our fundamental values as a people and serve our most basic, strategic interests."

Finally, in some instances, the United States may act out of humanitarian concern, even in the absence of a direct threat to U.S. national interests. Agencies and programs other than the U.S. armed forces are generally the best tools for addressing humanitarian crises, but military forces may be appropriate in certain, specific situations, such as when:

- A humanitarian crisis dwarfs the ability of civilian agencies to respond.
- The need for relief is urgent, and only the military can jump-start a response.
- The response requires resources unique to the military.
- The risk to American service members is minimal.

A good case in point was America's humanitarian intervention in Rwanda in the summer of 1994 to stop the cholera epidemic, which was killing 5,000 Rwandans a day. Only the U.S. military had the ability to rapidly initiate the humanitarian effort to bring clean water, food, and medicine to Hutu refugees who had fled from Rwanda in the wake of a catastrophic tribal conflict, and U.S. forces carried out their mission successfully, at little cost, with little risk, and then quickly withdrew.

IMPLEMENTING OUR PREVENT, DETER, AND DEFEAT APPROACH

Implementing our defense strategy involves literally hundreds of programs. Their details can be found in the sections which follow this introduction. Highlighted below, however, are some of the key ways that we are implementing our approach of prevent, deter, and defeat.

Reducing the Danger of Weapons of Mass Destruction

During the Cold War, the Soviet nuclear physicist Andrei Sakharov said that preventing a nuclear holocaust must be the "absolute priority" of mankind. This is still true. Today, a primary means for accomplishing this goal is the continued dismantlement of nuclear warheads, bombers, and ballistic missile launchers. The touchstone of our preventive activities in this area is the Cooperative Threat Reduction program, which helps expedite the START I Treaty reductions in the states of the former Soviet Union. This program is contributing to some remarkable accomplishments: over 4,000 nuclear warheads removed from deployment and more than 700 bombers and ballistic missile launchers dismantled; a nuclear-free Kazakstan; a Ukraine and Belarus on the way to becoming nuclear free; and successful removal of nuclear material from Kazakstan through Project Sapphire.

It is also vitally important that we prevent potential regional conflicts from assuming a nuclear aspect. That is why we have worked hard to help implement the framework agreement which has frozen North Korea's dangerous nuclear program and, when fully implemented, will eliminate the program altogether. Efforts to reduce the nuclear threat also include sanctions on Iraq and Iran and the indefinite extension without conditions of the historic Nuclear Non-Proliferation Treaty. Such diplomatic measures do not stand in isolation -- they are an integral and crucial part of the U.S. approach to preventing conflict.

Hedging Against Potential Future Threats

Despite our best efforts to reduce the danger of weapons of mass destruction, it is still possible that America -- and our forces and allies -- could again be threatened by these terrible weapons. That is why it is important for the United States to maintain a reduced but effective nuclear force. This deterrent hedge is not incompatible with significant reductions in American nuclear forces, nor is it incompatible with American support for the Nuclear Non-Proliferation Treaty and a comprehensive ban on nuclear testing. This nuclear hedge strategy is complemented by a program to develop a ballistic missile defense system that could be deployed to protect the continental United States from limited attacks, should a strategic threat to our nation arise from intercontinental ballistic missiles in the hands of hostile rogue states.

Another way we hedge against potential future threats is by maintaining selected critical and irreplaceable elements of the defense industrial base, such as shipyards that build nuclear submarines. With the end of the Cold War and the defense downsizing, the need for large numbers of major new ships, aircraft, and armored vehicles has declined significantly. Allowing these defense-unique production facilities to shut down or disappear completely, however, would curtail the nation's ability to modernize or prepare for new threats down the road. Therefore, the Department will selectively procure certain major systems in limited quantities to keep their production capabilities warm -- such as the Navy's Seawolf fast-attack submarine, which will bridge the gap until we are ready to build the next generation nuclear submarine.

Maintaining Strong Alliances and Reaching Out to Old Rivals and New States

Maintaining strong alliances with our traditional allies in Europe and the Asia-Pacific, maintaining constructive relations with Russia and China, and reaching out to new democracies and friends are key elements of our defense posture.

EUROPE

In Europe, NATO is the foundation of our security strategy, and we continue to play a leadership role within NATO. There are those who allege that NATO is now obsolete. But, in fact, NATO has provided a zone of stability for Western Europe for 40 years, and all 16 members have reaffirmed the importance of the Alliance. Indeed, NATO has received requests from new nations wishing to join, to be a part of this zone of stability, and NATO is on a steady, deliberate process leading to enlargement of the Alliance.

NATO's Partnership for Peace (PFP) program is already extending a zone of stability eastward across Europe and Central Asia by promoting military cooperation among NATO countries, former members of the Warsaw Pact, and other countries in the region. This cooperation takes place at many levels, from frequent meetings between Defense Ministers to officer exchanges at schools and planning headquarters. The highlight of PFP, though, is the joint exercise program, focusing on peacekeeping training. In August 1995, the United States hosted one of these exercises, Cooperative Nugget, at Fort Polk, Louisiana. Such exercises have had a remarkable effect on European security by building confidence, promoting transparency, and reducing tensions among nations that have, in many cases, been at odds for long periods of Europe's history. PFP is also the pathway to NATO membership for those Partners that wish to join the Alliance.

In fact, the positive effects of PFP resonate far beyond the security sphere. Since political and economic reforms are a prerequisite to participation in PFP or membership in NATO, many Partner nations have accelerated such changes. In addition, many Partner nations are starting to see value in actual PFP activities, irrespective of whether they lead to NATO membership. The lessons learned and values fostered through the program are intrinsically useful.

PFP is one of the most significant institutions of the post-Cold War era. Like the Marshall Plan in the 1940s, PFP today is creating a network of people and institutions across all of Europe working together to preserve freedom, promote democracy and free markets, and cooperate internationally -- all of which are critical to expanding the zone of stability in Europe in our day.

It is critical that this zone of stability in Europe include Russia. Key to this is Russia's active membership in PFP, NATO's development of a special security relationship with Russia, and Russia's integral involvement in broader European security issues, as in Bosnia and Herzegovina. Open, productive security relations with Russia are an essential element of our approach to advancing security in Europe and ultimately limiting the potential for conflict. Recognizing that Russia remains a major world power with global interests and a large nuclear arsenal, the United States seeks a pragmatic partnership with Russia whereby we pursue areas of agreement and seek to reduce tensions and misunderstandings in areas where we disagree. Our successful efforts to include a Russian brigade in the U.S. sector of the NATO-led peace implementation force in Bosnia and Herzegovina readily reflect this partnership.

In addition to cooperative threat reduction efforts, such as the Nunn-Lugar program, we also seek to foster greater openness in the Russian defense establishment and to encourage Russia to participate in global nonproliferation activities and regional confidence building measures, by participating in the U.S.-Russian Commission on Economic and Technological Cooperation. The Commission, established by

Vice President Gore and Prime Minister Chernomyrdin in 1993, seeks to build confidence by forging a better economic relationship between the United States and Russia. The Defense Department is part of an interagency effort sponsored by the Commission focused on finding, facilitating, and helping finance investments in the region by American business enterprises, targeting a wide range of opportunities -- from defense conversion to space exploration to prefabricated housing. The Commission's activities benefit Russia's attempts to achieve a market economy, benefit American companies, and benefit American security interests -- a triple win!

ASIA-PACIFIC

In the Pacific, the United States and Japan have entered into a new era in our regional relationship, as well as in our global partnership. A stronger U.S.-Japanese alliance will continue to provide a safe environment for regional peace and prosperity. Our alliance with South Korea not only serves to deter war on the peninsula, but also is key to stability in the region. These security alliances and the American military presence in the Western Pacific preserve security in the region, and are a principal factor in dampening a regional arms race.

We are also fully participating in multilateral security dialogues, such as the Association of Southeast Asian Nations (ASEAN) Regional Forum, which help reduce tensions and build confidence so that tough problems like the territorial dispute over the Spratly Islands in the South China Sea can be resolved peaceably.

Central to our efforts to prevent conflict in the Asia-Pacific region is our policy of comprehensive engagement with China, a major power with a nuclear capability. The United States will not ignore China's record on human rights, political repression, or its sale and testing of dangerous weapons, but we also will not try to isolate China over these issues. We want to see China become a responsible, positive participant in the international arena, and the best way to encourage this is to maintain a vigorous dialogue over a wide range of issues -- including security issues -- so that we can pursue areas of common interests and reduce tensions.

In South Asia, the United States has restarted a bilateral security relationship with Pakistan and begun a new security dialogue with India. These ongoing dialogues can help all three countries focus on areas of common interest, such as international peacekeeping, and could in time provide the confidence necessary to address more difficult problems, such as nuclear proliferation and the long-simmering conflict over Kashmir.

THE AMERICAS

In our own hemisphere, we are witnessing a new era of peace, stability, and security. From Point Barrow to Tierra del Fuego, all 34 nations except Cuba have chosen democracy, and economic and political reforms are sweeping the region. This historic development paved the way for the first Defense Ministerial of the Americas last summer, at which delegations from all 34 democracies gathered in Williamsburg, Virginia, to consider ways to build more trust, confidence, and cooperation on security issues throughout the region. Following on the success and progress at Williamsburg, the nations of this hemisphere already are planning for the second Defense Ministerial in Argentina in the fall of 1996.

Like the Partnership for Peace in Europe, the Defense Ministerial of the Americas provides an opportunity to build a zone of stability in a region once destabilized by Cold War tensions. In the Americas, as in Europe, the tools for building stability include joint training and education programs that promote professional, civilian-controlled militaries as well as personal interactions; information sharing

on national military plans, policies, and budgets; and confidence-building measures. In Europe, these activities are led by the United States and NATO. In the Americas, they are emerging by consensus and encouraged by the United States. But ultimately, the result is the same: more democracy, more cooperation, more peace, and more security for the United States.

REGIONAL PREVENTIVE DEFENSE EFFORTS

In each of the regions discussed, the United States has military-to-military relationships and is conducting joint exercises with a much wider range of countries than ever before. These activities promote trust and enable forces from different countries to operate together more effectively, which is essential given the increasing prevalence of combined operations. In the Gulf War, for example, some 40 countries made military contributions. Nearly three dozen countries are participating in the peacekeeping force in Bosnia and Herzegovina, including many non-NATO countries.

Another important part of preventive defense is our effort to promote democratic civil-military relations. One such program, conducted jointly with the State Department, is the International Military Education and Training program, which has now trained half a million foreign officers in the fundamentals of civil-military relations over the last several decades. Similarly, recently established regional training and study centers like the Marshall Center in Germany and the Asia-Pacific Center for Security in Hawaii are designed to promote contacts between regional military officers and civilian defense officials and to foster the principles of civilian control of the military.

Protecting the Readiness of Our Forces -- Near- and Medium-Term

No security strategy is better than the forces that carry it out. Today, the United States has forces that are well-trained, well-equipped and, most of all, ready to fight, as their performance over the past year in the Persian Gulf, Haiti, and Bosnia and Herzegovina illustrates. The Department has maintained this readiness in spite of a drawdown of historic proportions. Drawdowns create turbulence in the force, which historically has undermined readiness. Recognizing this history, we have taken unprecedented steps to maintain readiness while reducing our forces in the wake of the Cold War. By the end of 1996, the drawdown will be nearly complete, which means an end to the turbulence. In the meantime, though, the Department continues to maintain near-term readiness at historically high levels through robust funding of the Operation and Maintenance (O&M) accounts. This remains the Department's top budget priority. Manifesting this priority, the Department's FY 1995 and FY 1996 budgets and the FY 1997 budget request are at historically high levels of O&M funding (normalized to force size).

Medium-term readiness depends on attracting top quality people and retaining them after they have developed technical and leadership skills. To do so, we must offer not only challenging and rewarding work, but also an appropriate quality of life, a term used to encompass the entire package of compensation and benefits, as well as the work and living environment for military service personnel. Protecting quality of life is not only the right thing to do for the men and women who serve and sacrifice for their country, it is also critical to preserving medium-term readiness.

Last year, President Clinton approved an increase in defense spending of $25 billion over six years largely aimed at improving the quality of military life. This includes a commitment to ensure that military personnel receive the full pay raise authorized by law through the end of the century. It is also directed at extensive improvements in military quality of life programs, including housing -- a key concern to service families. This past year, a distinguished panel, led by former Army Secretary John Marsh, looked beyond existing DoD efforts to identify quality of life problems and suggest high-leverage, affordable solutions. The panel concentrated on three major areas: housing, personnel tempo, and community and family

services. Action on the panel's recommendations is being incorporated into the Department's overall effort to preserve quality of life.

Modernization -- The Key to Long-Term Readiness

To ensure military readiness in the long term requires the Department to modernize the armed forces with new systems and upgrades to existing systems to maintain America's technological advantage on the battlefield. For the past five years, the Department has taken advantage of the drawdown and slowed modernization in order to fully fund those expenditures that guarantee near-term readiness -- spare parts, training, and maintenance. As a result, the modernization account in FY 1997 will be the lowest it has been in many years, about one-third of what it was in FY 1985. At the same time, the average age of our military equipment has remained fairly stable, because as the forces were drawn down, the older equipment was weeded out. But now that the drawdown is nearly over, the modernization reprieve from aging is nearly over, too.

So, beginning in FY 1997, the Department is planning a modernization ramp-up, which will be critical to the readiness of the forces in the next century. By the year 2001, funding to procure equipment to modernize our forces will increase to $60.1 billion in current dollars -- over 40 percent higher than what it is in the FY 1997 budget. This five-year plan will focus on building a ready, flexible, and responsive force for a changing security environment. The force will continue to maintain our technological superiority on the battlefield by seizing on the advances in information-age technology, such as advanced sensors, computers, and communication systems. At the same time, the modernization program will focus on bread and butter needs, such as airlift and sealift, and the everyday equipment ground forces need in the field, such as tactical communications gear, trucks, and armored personnel carriers.

This five-year modernization plan is based on three assumptions. First, the defense budget topline will stop its decline in FY 1997 and begin to rise again (as proposed in the President's five-year budget). Second, the Department will achieve significant savings from infrastructure reductions, most importantly from base closings. The third assumption of our modernization program is that the Department will achieve significant savings by outsourcing many support activities and overhauling the defense acquisition system.

Base Realignment and Closure (BRAC)

The Base Realignment and Closure process is directly linked to modernization and long-term readiness. As we downsize the military force, we must also reduce our Cold War infrastructure. Our efforts to manage this process have been aimed at saving money while ensuring that troops have the training and equipment they need to be ready in the future. While the Department has made significant progress in base closings, many BRAC recommendations have not yet been implemented, and an imbalance between force structure and infrastructure remains.

Until we fully execute the BRAC process, money will be tied up in nonperforming real estate, draining funds from our modernization efforts and other programs. While base closing initially costs money -- the FY 1996 budget included $4 billion allocated to base closing costs -- there will be significant savings in the future. In the FY 1999 budget, the Department projects $6 billion in savings from closing the bases, thus allowing a $10 billion swing in savings. These and future savings from base closing will be devoted to modernization.

Completing the BRAC process quickly is not only key to saving money, it also is the right thing to do for the communities involved. The Department is helping these communities find imaginative ways to put the

excess defense property to productive use as quickly as possible. When base closure is done right, it can leave communities better off, with a more diverse economy and more jobs. The key is early community involvement and planning. For example, when Louisiana's England Air Force Base was slated for closure, the Alexandria Chamber of Commerce worked with the Air Force to develop a base reuse plan. Months before the base did close, small business enterprises had already signed leases, resulting today in hundreds of new jobs for Alexandria.

Acquisition Reform and Privatization

Over the past two years, the Department has undertaken the most revolutionary changes in its acquisition system in 50 years, and is looking for ways to further reform the system through privatization.

ACQUISITION REFORM

First, the Department totally reoriented the way it specifies its requirements in the acquisition process. The Department is now using performance specifications, which describe what is required instead of how to achieve the requirement, or commercial standards, wherever practical. This approach will permit the Department to reap the benefits of having access to the latest technologies and best manufacturing practices available in the commercial industrial base.

The second major change in the defense acquisition system began on October 1, 1995, when the new federal acquisition streamlining regulations were published. These regulations, in effect, will allow the Defense Department to buy from the commercial marketplace more often, and buy more like commercial firms do.

Defense acquisition reform is important not only because it will help pay for the defense modernization program, but also because of a phenomenon called technology pull. This phrase describes the demand for advanced technology to give the United States battlefield superiority. Technology pull has its roots in the U.S. military experience in Operation Desert Storm. Before Operation Desert Storm, many U.S. military commanders and outside experts were skeptical of advanced technology applied to combat. For example, they questioned the concept of the Reconnaissance Strike Forces, developed in the 1970s and deployed in the 1980s. This concept combined stealth aircraft, precision-guided munitions, and advanced surveillance technology to offset superior numbers of Soviet forces. But there was great concern that such advanced technology was too delicate, or that it would not work in the fog of war. But in Operation Desert Storm, the same Reconnaissance Strike Forces crushed the Iraqi military force with very low U.S. losses. Skeptics became believers. Advanced technology proved itself, and military commanders are finding myriad uses for it -- not just smart weapons, but also smart logistics, smart intelligence, and smart communications. Military commanders are revising their doctrine and tactics to take advantage of this technology, and they want to pull it faster into their war planning.

The key technology they want is information technology, and it is being developed at a breathtaking pace, but not by the Defense Department. It is being developed by commercial computer and telecommunications companies, dual-use (defense-commercial) technology firms, and small high-tech businesses and universities. The Department cannot pull this technology from these sources without acquisition reform, because the current system limits access to these sources either directly, by throwing up regulatory barriers, or indirectly, by slowing the ability to purchase and employ new generations of technology in a timely way.

PRIVATIZATION

The Department not only needs to do more business with commercial industry, it also needs to act more like commercial industry.

There are numerous examples of private sector companies turning to outside suppliers for a wide variety of specific, non-core goods and services. By focusing on core competencies, they have reduced their costs by lowering overhead and improved their performance.

Major opportunities exist for the Department to operate more efficiently and effectively by turning over to the private sector many non-core activities. For example, private sector companies are already under contract to perform some commercial activities on bases around the world. This type of outsourcing can be expanded.

To implement this strategy, the Department has been systematically examining opportunities for privatizing, as well as reviewing both institutional and statutory obstacles to its full utilization. Early in 1996, work groups engaged in these efforts will provide reports on how privatization can be better used to lower DoD costs while enhancing its effectiveness.

CONCLUSION

In the uncertainty that has followed the Cold War, the United States has not only the opportunity, but also the responsibility to help ensure a safer world for generations of Americans. 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 supporting American leadership in this new era. As the Department completes the transition to a post-Cold War military force, it has undertaken policies and programs to prevent threats to our security from emerging and to maintain well-trained, ready forces able to deter or respond quickly to a range of potential threats and seize opportunities.

The world has changed dramatically over the past few years, but one thing remains constant: a strong military force, made up of the finest American men and women, is the nation's best insurance policy. Each element of the defense program described in this report supports this fundamental, indisputable fact.

/s/
William J. Perry

Chapter 1

U.S. DEFENSE STRATEGY

INTRODUCTION

Since the founding of the Republic, the U.S. government has always sought to secure for the American 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.

On the eve of the 21st century, the international environment is more complex and integrated than at any other time in history. The number and diversity of nations, organizations, and other actors vying for influence continue to grow. At the same time, the global economy is increasingly interdependent. Not only does this offer the United States the promise of greater prosperity, it also ties the security and well-being of Americans to events beyond their borders more than ever before. Today, incidents formerly considered peripheral to American security -- the spread of ethnic and religious conflict, the breakdown of law and order, or the disruption of trade in faraway regions -- can pose real threats to the United States. Likewise, new opportunities have arisen for the United States, in concert with other like-minded nations, to advance its long-term interests and promote stability in critical regions.

In order to shape the international security environment in ways that protect and advance U.S. interests, the United States must remain engaged and exert leadership abroad. U.S. leadership can deter aggression, foster the peaceful resolution of dangerous conflicts, underpin stable foreign markets, encourage democracy, and inspire others to create a safer world and to resolve global problems. Without active U.S. leadership and engagement abroad, threats to U.S. security will worsen and opportunities will narrow. If the United States chooses not to lead in the post-Cold War world, it will become less able to secure the basic objectives outlined above.

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 in 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 nuclear, chemical, or 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 economic growth.
- Global environmental degradation.
- The illegal drug trade.
- International crime.

Many of these threats are global in scale and cannot be adequately addressed unilaterally, either by the United States or any other single nation state. Thus, the United States will need to secure the cooperation of a number of groups, nations, and international organizations to protect Americans from such threats.

THE NATIONAL SECURITY STRATEGY

The Administration's National Security Strategy acknowledges both the inescapable reality of interdependence and the serious threats to U.S. interests posed by actors beyond its borders. To protect and advance U.S. interests, the American government must be able to shape the international environment, influencing the policies and actions of others. This mandates that the United States remain 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. 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. As the President's National Security Strategy states, "The more that democracy and political and economic liberalization take hold in the world, particularly in countries of geostrategic importance to us, the safer our nation is likely to be and the more our people are likely to prosper."

The three principal components of the U.S. strategy of engagement and enlargement are:

- Enhancing security. The United States must maintain a strong defense capability and promote cooperative security measures.
- Promoting prosperity. The United States will work with other countries to create a more open and equitable international trading system and spur 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. 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 means that U.S. forces must be prepared to conduct a broad range of military missions without being spread too thin. This will require sustaining a high level of training and morale and maintaining modern, reliable equipment and facilities.

The Administration has also argued for balance between defense and domestic priorities. While these priorities may compete for resources in the short term, they are wholly complementary in the longer term. The United States cannot be prosperous if its major trade and security partners are threatened by aggression or intimidation; nor can it be secure if international economic cooperation is breaking down, because the health of the U.S. economy is interwoven with the global economy. So prudence dictates that U.S. strategy strike 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.

The forces and programs developed in the 1993 Bottom-Up Review and the Nuclear Posture Review, as 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 SECURITY STRATEGIES

The security relationships established by the United States and its allies and friends during the Cold War are essential to advancing America's post-Cold War agenda. To meet the unique challenges of the post-Cold War era, the United States seeks to further strengthen and adapt these partnerships and to establish new security relationships in support of U.S. interests.

In Europe, the end of the Cold War has brought new opportunities and new challenges. Hand in hand with its North Atlantic Treaty Organization (NATO) allies, the United States has sought to promote a free and undivided Europe that will work with the United States to keep the peace and promote prosperity. In the new security architecture of an integrated Europe, NATO is the central pillar and is complemented by the European Union and a strengthened Organization for Security and Cooperation in Europe. NATO's Partnership for Peace (PFP), unveiled at the January 1994 NATO Summit, has provided a means for expanding and intensifying political and military cooperation throughout Europe. NATO members and partners have participated in more than a dozen PFP exercises and hundreds of other training, planning, and consultation activities. PFP serves as a pathway for nations to qualify for NATO membership; for those partners that do not join NATO, PFP will constitute a strong link to Europe's preeminent security organization and concrete proof that the alliance is concerned about their security. Partnership for Peace and gradual NATO enlargement bolster efforts by Central and Eastern European nations and the New Independent States to build democratic societies and strengthen regional stability. Other efforts, including U.S. military programs like the European Command's Joint Contact Team Program and Marshall Center, similarly advance U.S. defense engagement with Central and Eastern Europe and the New Independent States.

The Secretary of Defense has made building cooperative defense and military ties with Russia, Ukraine, and the other New Independent States one of the Department of Defense's highest priorities. Moving away from the hostility of the Cold War and reducing its lethal nuclear legacy will be neither instantaneous nor easy. Steady, continued engagement that focuses on mutual security interests will be the cornerstone in building constructive relationships with the New Independent States. Through the pursuit of a pragmatic partnership, the United States will strive to manage differences with Russia to ensure that shared security interests and objectives take priority. A central objective is to encourage Russia to play a constructive role in the new European security architecture through the development of NATO-Russia relations and through Russia's active participation in PFP.

The East Asian-Pacific region continues to grow in importance to U.S. security and prosperity. This region has experienced unprecedented economic growth -- growth that in 1994 increased U.S. trade in the region to $435 billion and supported 2.8 million American jobs. The security and stability provided by the presence of U.S. military forces in the East Asian-Pacific area over the past 40 years created the conditions for such tremendous economic growth. Security, open markets, and democracy, the three strands of the President's National Security Strategy, are thoroughly intertwined in this region.

Today, the United States retains its central role as a force for stability in East Asia-Pacific, but it has begun to share greater responsibility for regional security with its friends and allies. The United States constructively participates in and supports regional security dialogues. It actively encourages efforts by East Asian-Pacific nations to provide host-nation support for U.S. forces, contribute to United Nations (UN) peace operations, and participate in international assistance efforts throughout the world. While these regional initiatives are important, there is no substitute for a forward-stationed U.S. military presence -- essential to both regional security and America's global military posture -- or for U.S. leadership like that which brought together the broad coalition that convinced 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 Middle East peace, assuring the security of Israel and U.S. principal Arab partners, and maintaining the free flow of oil at reasonable prices. The United States will continue to work to extend the range of Middle East peace and stability. Integral to that effort is the Administration's strategy of dual containment of Iraq and Iran for as long as those states pose a threat to U.S. interests, to other states in the region, and to their own citizens. Maintaining the United States' long-standing military presence in Southwest Asia is critical to protecting the vital interests America shares with others in the region.

The United States will stay engaged in the security of South Asia militarily as well as diplomatically and economically. Defense relationships with India and Pakistan can support broader U.S. interests and objectives, including nuclear and missile nonproliferation and global peacekeeping. The challenge the Department faces is to develop defense relationships in ways that reduce tensions in South Asia and protect U.S. vital interests in the adjacent areas. U.S. bilateral relationships with individual South Asian nations can advance and flourish without diminishing or tilting U.S. ties to other nations in the region.

The overarching U.S. objectives in the Western Hemisphere are to sustain regional stability and to increase regional cooperation. A more stable and cooperative environment would help ensure 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, DoD is working to enhance the sharing of responsibility for mutual security interests with its friends and allies in the Western Hemisphere. Contributions might include cost-sharing for U.S. deployments, the provision of non-U.S. forces to coalition operations, support for international development and democratization, and the contribution of personnel or resources to UN peace operations.

Although, at present, the United States has no permanent or significant military presence in Africa, the United States does desire access to facilities and strengthened relations with African nations through initiatives that have been or might be especially important in the event of contingencies or evacuations. The United States has significant interests in Africa in countering state-sponsored terrorism, narcotics trafficking, and proliferation of conventional weapons, fissile materials, and related technology. The United States must continue to work with the continent's nations to help secure U.S. interests.

Africa also provides fertile ground for promoting democracy, sustaining development, and resolving conflict. The United States does not seek to resolve Africa's many conflicts but rather to empower African states and organizations to do so themselves. It also supports the democratization and economic growth that are necessary for the long-term stability of the region. The United States actively participates in efforts to 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 these regions, nations contribute to global and regional security in a wide variety of ways; the notion of responsibility sharing reflects the broad range of such contributions. In addition to providing host-nation support for U.S. forces, states can contribute to international security by maintaining capable military forces, assigning those forces to coalition missions like Operation Desert Storm, NATO's Implementation Force (IFOR) in Bosnia and Herzegovina, or to UN peacekeeping operations, and providing political and financial support for such shared objectives as international economic development or the dismantlement of North Korea's nuclear program. Since the end of the Cold War, U.S. friends and allies have taken on increased shares of the burden for international security, providing, for example, over 245,000 troops to Operation Desert Storm and $70 billion to the United States and other coalition members to help defray their expenses in the war. Yet room for more equitable and cost-

effective responsibility sharing remains. The Department of Defense is committed to working with Congress and with U.S. friends and allies toward this goal.

U.S. MILITARY MISSIONS

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 the United States and advance its interests. The United States is the only nation capable of unilaterally conducting effective, large-scale military operations far beyond its borders. There is and will continue to be a great need for U.S. forces with such capabilities, not only to protect the United States from direct threats but also to shape the international environment in favorable ways, particularly in regions critical to U.S. interests, and to support multinational efforts to ameliorate human suffering and bring peace to regions torn by ethnic, tribal, or religious conflicts.

Supporting the National Security Strategy of Engagement and Enlargement requires that the United States maintain robust and versatile military forces that can accomplish a wide 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 its 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 are used.

Finally, to meet all 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; viable joint doctrine; realistic training; strategic mobility; and sufficient support and sustainment capabilities.

Deterring and Defeating Aggression

The focus of U.S. planning for major regional conflict is based 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 aggressive 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.

U.S. planning for fighting and winning these MRCs envisages an operational strategy that, in general, unfolds as follows (recognizing that in practice some portions of these phases may overlap):

- 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 who the next opponent will be, how that opponent will fight, or how the conflict might unfold. 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. This is the principal determinant of the size and composition of U.S. conventional forces. A force with such capabilities is required to avoid a situation in which an aggressor in one region might be tempted to take advantage of a perceived vulnerability when substantial numbers of U.S. forces are committed elsewhere. More fundamentally, maintaining a two-MRC force helps ensure that the United States will have sufficient military capabilities to defend against a coalition of hostile powers or a larger, more capable adversary than is foreseen today.

U.S. forces fighting alongside their regional 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 maintain and improve upon this capability.

Stability Through Overseas Presence

The need to deploy or station U.S. military forces abroad in peacetime is also an important factor in determining overall U.S. force structure. In an increasingly interdependent world, U.S. forces must sustain credible military presence in several critical regions in order to shape the international security environment in favorable ways. Toward this end, 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, friends, and interests in critical regions.
- Improve U.S. forces' 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.

Through foreign military interactions, including training programs, multinational exercises, military-to-military contacts, and security assistance programs that include judicious foreign military sales, the United States can strengthen the self-defense capabilities of its friends and allies. Through military-to-military contacts and other exchanges, the United States can reduce regional tensions, increase transparency, and improve its bilateral and multilateral cooperation. (See Appendix J, Military Assistance.)

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. The stabilizing presence of U.S. forces also helps to prevent conflicts from escalating to the point where they threaten greater U.S. interests at higher costs.

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. Such operations range from smaller-scale combat operations to peace operations and noncombatant evacuations. They are an important component of U.S. strategy and, when undertaken selectively and effectively, can protect and advance U.S. interests.

The United States will always retain the capability to intervene unilaterally when its interests are threatened. The United States also will advance its interests and fulfill its leadership responsibilities by providing military forces to selected allied/coalition operations, some of which may support UN Security Council (UNSC) Resolutions (e.g., U.S. participation in coalition sanctions enforcement and no-fly zone enforcement in Southwest Asia). Further, the United States will continue to participate directly in UN peace operations when it serves U.S. interests. UN and multinational peace operations can help prevent, contain, and resolve conflicts that affect U.S. interests. When it is appropriate to support a multinational peace operation, participating U.S. forces benefit from the authority and support of the international community and from sharing costs and risks with other nations.

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 (e.g., U.S. operations in Grenada), promote democracy (e.g., U.S. operations in Panama and Haiti), or otherwise respond to conflicts that affect U.S. interests.

PEACE OPERATIONS

Peace operations include peacekeeping and peace enforcement. Peacekeeping involves deployment of military and/or civilian personnel with the consent of all major belligerent parties in order to preserve or maintain the peace. Such operations are normally undertaken to monitor and facilitate implementation of an existing truce agreement and support diplomatic efforts to achieve a lasting political settlement. Peace enforcement is the application of military force, or the threat of its use, to compel compliance with resolutions or sanctions to maintain or restore international peace and security, or address breaches of the peace or acts of aggression. Such operations do not require the consent of involved states or of other parties to the conflict. These operations are authorized by the UNSC or a regional organization. They may be conducted by the United Nations, by a multinational coalition led by a member state or alliance, or by a regional organization.

The United States has an interest in supporting UN peace operations as a means of sharing the burdens of protecting international peace and security. Of the approximately 70,000 personnel serving in UN blue-helmeted peace operations, about 5 percent are American. Previously, the United States was assessed 30.4 percent of the annual cost of UN peace operations; in FY 1996, the United States will be assessed only 25 percent of these costs. The price, in manpower and money, to protect America's interests around the world would be much greater without the burdensharing of the United Nations and its member states.

Members of the U.S. armed forces have been involved in UN peacekeeping missions since 1948. At the end of 1995, 3,305 U.S. military personnel were participating in UN blue-helmeted operations. During the year, significant U.S. participation was limited to three of 17 missions -- Croatia (UNCRO), the Former Yugoslav Republic of Macedonia (UNPREDEP), and in Haiti (UNMIH). (A small number of U.S. armed forces also served as military observers or headquarters staff in other UN peace operations.) The United States also continues to support non-UN peace operations, such as the Multinational Force and Observers in the Sinai and the Military Observer Mission in the border region between Peru and Ecuador.

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. First, the increasing size and complexity of peace operations (including the significant differences between peacekeeping and peace enforcement) and the sheer number of operations currently underway severely challenge the current capabilities of the international community to respond effectively. Second, any large-scale peace operation likely to involve combat should be conducted by a capable coalition or regional organization. Recent experience also has demonstrated the need to fully integrate -- at the national and international levels -- political, military, economic, and humanitarian actions in peace operations, ensuring that military forces are adequately supported by nonmilitary efforts. Finally, DoD and other relevant agencies have also learned and applied important lessons about planning a smooth transition from a coalition operation to a UN-led peace operation.

With the certainty that U.S. and allied interests will continue to be challenged by conflict, DoD has taken steps to 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 on issues ranging from communications and information architecture to contracted service and materiel support. The U.S. military helped train the staffs of two UN peace operations that began in 1995 -- Haiti (UNMIH) and Angola (UNAVEM III). In both cases, this contributed significantly to the potential success of the missions.

In addition, U.S. forces continue to enhance their capabilities for conducting these operations, especially in the areas of doctrine development and training. The Joint Staff has recently issued Joint Publication 3-07, Joint Doctrine for Military Operations Other Than War (MOOTW), providing guidance to all Services and combatant commands on the conduct of peace operations and other types of MOOTW. The Army has published Field Manual 100-23, a comprehensive manual on peace operations, and the U.S. Army Infantry School is completing a training support package that will guide brigades and battalions in the conduct of peace enforcement operations. The Marine Corps is completing the MOOTW Supplements to its Small Wars Manual, and the Air Force has drafted Air Force Doctrine Document 3, Military Operations Other Than War, which addresses air and space power involvement in all types of MOOTW. Finally, the Joint Task Force Commander's Handbook for Peace Operations and the Joint Electronic Library of Peace Operations reference materials are also available.

As peace operations doctrine has emerged, training also has focused more directly on peace operations. The Chairman of the Joint Chiefs of Staff conducted a peace operations wargame for potential Joint Task Force commanders from the unified commands in June 1995. U.S. forces conducted several peace operations rotations at the Joint Readiness Training Center, preparing units for service in Haiti and hosting a pioneering exercise (Cooperative Nugget) with more than a dozen other member nations of the Partnership for Peace program. At the Combat Maneuver Training Center in Germany, U.S. and Dutch forces have trained for deployments to MOOTW environments. Many PFP and in-the-spirit-of-PFP exercises focus on peace operations-related training, from maritime embargoes to contingent battalions controlled by multinational headquarters. In Hawaii, the U.S. Pacific Command conducted a peace operations seminar in June 1995 that fostered dialogue between many Pacific rim nations. Also, U.S.

forces have conducted an array of significant wargames and training, including multiphased exercises on MOOTW for civilian and military leaders and their staffs (such as the U.S. Marine Corps' Emerald Express).

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. 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 meet urgent humanitarian needs created by manmade or natural disasters, including food shortages, migrant and refugee problems, and the indiscriminate use of landmines. Assisting countries with such needs, and thereby promoting good will, is integral to the U.S. strategy of engagement and enlargement. Humanitarian assistance not only provides relief, but also helps victims of violence and disaster return to the path of recovery and sustainable development. These programs support the regional unified commanders in chief's peacetime engagement strategy of promoting political and economic stability in their respective areas of responsibility.

During FY 1995, 104 countries benefited from DoD humanitarian assistance, and the United States conducted several major humanitarian operations, including:

- Bosnia Relief. U.S. forces have flown over 6,600 humanitarian missions into Sarajevo and airdrops over Bosnia and Herzegovina since July 1992, contributing to the multinational effort by delivering over 73,000 metric tons of humanitarian supplies.
- 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. The migrant camps in Guantanamo Bay, Cuba, closed in January 1996.
- Northern Iraq Relief. During most of 1995, DoD funded and managed a relief program for the population of northern Iraq, including the provision of food; basic construction materials for resettlement of villages; and medical, winterization, and agricultural supplies. On October 1, 1995, responsibility for funding the program was transferred to the U.S. Agency for International Development.

In support of the Federal Emergency Management Agency, DoD has also helped provide assistance to victims of domestic disasters. Disaster responses to the Midwest floods, the Oklahoma City bombing, and Hurricanes Marilyn and Opal have placed U.S. forces in stricken areas to help provide support, infrastructure repair, and restoration of critical services.

Combating Terrorism. To protect American citizens and interests from the threat posed by terrorist groups, the United States needs units available with specialized counterterrorist capabilities. 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 Department of State; the Department of Justice, including the Federal Bureau of Investigation; and the Central Intelligence

Agency. Positive results come from integrating intelligence, diplomatic, and legal 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. Such actions by the United States send a firm message that terrorist acts will be punished, thereby deterring future threats.

Noncombatant Evacuation Operations. The United States government's responsibility for protecting the lives and safety of Americans abroad extends beyond dealing with the threat of terrorism. Situations such as the outbreak of civil or international conflict and natural or manmade disasters require that selected U.S. military forces be trained and equipped to evacuate Americans. For example, U.S. forces evacuated Americans from Monrovia, Liberia, in August l990, and from Mogadishu, Somalia, in December 1990. In l991, U.S. forces evacuated nearly 20,000 Americans from the Philippines in the weeks following the eruption of Mount Pinatubo. In 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 U.S. law enforcement agencies (LEAs), the Department of State, and cooperating foreign governments, continues to participate in combatting the flow of illicit drugs into the United States. The Department strives to achieve the objectives of the National Drug Control Strategy through the effective application of available resources consistent with U.S. law.

The Department supports the counterdrug mission in five key areas:

- Support to source nations. DoD provides training and other operational support to source-nation counterdrug units to enable them to interdict drug operations, seize deliveries, and arrest traffickers.
- Dismantling cartels. DoD continues to enhance its support for the Drug Enforcement Administration's strategy of dismantling the cocaine cartels and the cocaine business.
- Detection and monitoring the transport of illegal drugs. DoD operates detection and monitoring assets that cover the 2.5 million square mile source and transit zone stretching from South America to U.S. borders.
- Direct support to drug LEAs in the United States. Active, Reserve, and Guard forces provide unique support to domestic drug LEAs in 10 categories -- including transportation, maintenance, training, and intelligence.
- Demand reduction. The Department provides community awareness and community outreach programs, as well as internal drug testing, education and training, and treatment programs.

Countering 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, many of America's most likely adversaries already possess chemical or biological weapons, and some appear determined to acquire nuclear weapons. Weapons of mass destruction in the hands of a hostile power threaten not only American lives and interests, but also the United States' ability to project power to key regions of the world. The United States will retain the capacity to retaliate against those who might contemplate the use of WMD, so that the costs of such use will be seen as outweighing the gains.

Addressing the threat of WMD proliferation is no small challenge. The United States has a balanced, multitiered approach to counterproliferation, including enhancing U.S. capabilities in the following areas:

- Deterrence. Continual assessments of the strategic personality of countries with nuclear, biological, or chemical weapons to better understand their leaders' intentions and what particular

combination of declaratory policy, force posture, and other political, diplomatic, and military signals can best dissuade them.

- Intelligence. Overall threat assessment and timely intelligence and detection for combat operations and management.
- Ballistic and cruise missile defense. Systems that 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. Battlefield detection, decontamination, and individual and collective protection against chemical and biological warfare agents.
- Counterforce. Capabilities to seize, disable, or destroy WMD arsenals and their delivery means prior to their use without unacceptable collateral effects.
- Effective power projection. Reassessment of U.S. approaches to power projection to minimize the vulnerability of U.S. forces to attacks by WMD.
- Defense against covert threats. Improved capabilities to detect and disarm WMD that may be brought covertly into the United States.

The United States also continues to face potential nuclear threats from the New Independent States. Russia maintains a large and modern arsenal of strategic and non-strategic nuclear weapons. Even after the Strategic Arms Reduction Treaty (START) II is ratified and enters into force, Russia will retain a formidable strategic nuclear arsenal of up to 3,500 deployed warheads as well as several thousand non-strategic nuclear weapons which are not subject to START II. Moreover, strategic nuclear weapons from the former Soviet Union still lie outside of Russia. Perhaps more threatening is the risk that the materials, equipment, and know-how needed to make nuclear weapons will leak out of the New Independent States and into potentially hostile nations.

The United States seeks Russia's full implementation of the START accords. The United States also will continue to press for the elimination of all nuclear weapons and strategic offensive arms in Ukraine, Belarus, and Kazakstan as pledged by the leaders of those countries in accordance with START I and the Nuclear Non-Proliferation Treaty. The United States will continue to: provide assistance under the Nunn-Lugar program for the destruction of WMD and removal of all nuclear weapons from Ukraine and Belarus; 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. These counterproliferation goals require a strong relationship with Russia and all the New Independent States.

U.S. nuclear forces remain an important deterrent. In order to deter any hostile nuclear state and to convince potential aggressors that seeking a nuclear advantage would be futile, the United States will retain strategic nuclear forces sufficient to hold at risk a broad range of assets valued by potentially hostile political and military leaders. This requirement is fully consistent with meeting America's current arms control obligations.

CONCLUSION

America's defense strategy aims first and foremost to protect the life, property, and way of life of its citizens. Its success ultimately relies on a combination of the nation's superior military capabilities, its unique position as the preferred security partner of important regional states, and its determination to influence events beyond its borders. By providing leadership and shaping the international security arena, the United States, along with its allies and friends, can promote the continued spread of peace and prosperity. Only by maintaining its military wherewithal to defend and advance its interests and underwrite its commitments can the United States retain its preeminent position in the world.

Chapter 2

U.S. FORCES

INTRODUCTION

The United States' strategy of engagement and enlargement requires forces that are able, in concert with regional allies, to fight and win two major regional conflicts (MRCs) that occur nearly simultaneously. This requirement, established in the Bottom-Up Review, remains the most significant factor in determining the overall size and structure of U.S. general purpose forces. The Bottom-Up Review also calls for forces capable of meeting a wide range of challenges, including sustaining credible overseas presence, remaining prepared to conduct contingency operations, and maintaining strong nuclear deterrence as well as deterring and preventing the effective use of biological and chemical weapons. To meet these challenges effectively, U.S. forces must be positioned forward or ready to deploy rapidly to distant regions to achieve their objectives quickly and decisively.

MAJOR REGIONAL CONFLICTS

During the Cold War, U.S. defense planning focused on winning a large-scale war in Europe. With the changes in the global security environment, the United States today must plan for the more likely scenario of fighting and winning regional conflicts on the scale of the 1991 Gulf War or a potential conflict in Korea. In contrast to the Cold War, the timing and location of these regional conflicts are uncertain, and the bulk of required U.S. forces will not be in theater prior to the outbreak of conflict. Even in areas of great U.S. interest and high threat, where some equipment is prepositioned and troops are forward deployed, most U.S. forces will deploy from the United States. U.S. defense plans therefore must ensure selected forces can quickly project power from the United States into threatened regions to secure U.S. interests and help allies defeat hostile regional powers. Moreover, the sustainment of U.S. power projection forces -- in the absence of a large, forward-stationed logistics structure -- will require the development and employment of new logistics technologies.

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 expects that regional allies will fight along with U.S. forces, and that 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 unilaterally if necessary.

Detailed analyses of possible future MRCs suggest that the following forces will be adequate, under most conditions, to successfully fight and win a single MRC, assuming that DoD continues to make critical programmed enhancements to strategic lift, equipment prepositioning, and other force capabilities and their supporting assets:

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

The United States could commit more forces than these in the event of unlikely or unforeseen circumstances, particularly if initial U.S. defensive efforts fail. The need to hedge against such eventualities is taken into account in designing the overall active and Reserve force structure.

A wide range of analytical efforts undertaken by the Department of Defense since the Bottom-Up Review further examined the adequacy of the force structure discussed above and refined its underlying analyses. Among these efforts were several assessments performed in the Office of the Secretary of Defense (OSD) of U.S. military posture in Korea and Southwest Asia, conferences among the Joint Chiefs of Staff and combatant commanders, and the following:

- Mobility Requirements Study Bottom-Up Review Update (MRS BURU). The MRS BURU reexamined requirements for strategic sealift, prepositioning, and airlift in light of the forces and defense strategy established in the Bottom-Up Review.
- Nimble Dancer Exercises. The Chairman of the Joint Chiefs of Staff sponsored a series of wargames, called Nimble Dancer, that assessed the capability of U.S. forces to fight and win two nearly simultaneous MRCs postulated for 1997 and at the end of the Future Years Defense Program (FYDP) period. Participants included representatives from the Joint Staff, OSD, the Services, and all the combatant commands.
- Intelligence Bottom-Up Review (IBUR). The DoD Intelligence Community, along with members of the military operational community, conducted a study of its requirements. The IBUR assessed the adequacy of intelligence capabilities to support U.S. operations in two nearly simultaneous MRCs.

While these efforts recommended some adjustments to the defense program, they all concluded that the force structure and programs that constitute the Bottom-Up Review-based defense program remain sufficient to enable the United States, in concert with regional allies, to fight and win two nearly simultaneous MRCs. Hence, the Department will continue to implement that program.

OVERSEAS PRESENCE

A second broad class of military operations that determine the overall size and shape of U.S. forces is overseas presence. Although all Services contribute substantially to a U.S. overseas presence posture, overseas presence needs impose requirements for naval forces 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 their requirements for two MRCs.

The United States will continue to maintain a robust overseas presence in several forms:

- Permanently stationed forces.
- Humanitarian demining.
- Periodic and temporary deployments of forces.
- Prepositioning of military equipment and supplies.
- Combined exercises.
- Nation assistance.
- Port call and other force visits.
- Foreign military interactions.
- Security assistance offices.
- Defense 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 U.S. military's peacetime overseas presence 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 helps shape the international security environment by deterring adventurism and coercion by potentially hostile states, reassuring friends, enhancing regional stability, and underwriting the larger strategy of engagement and enlargement. It thus 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. The reassurance that a visible and capable U.S. military presence provides both to America's traditional allies in Western Europe and to its new Partners for Peace in the East aids in the development of a stable and democratic post-Cold War Europe. President Clinton underscored U.S. resolve to sustain U.S. presence in Europe by pledging 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. European Command, DoD determined that 109,000 troops are required at this time. This level of presence is sufficient both to respond to plausible crises and to provide tangible evidence of America's commitment to preserving regional stability. In addition, this force level permits 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 an emerging regional 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 East Asian-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 viewed by regional actors as a reassuring presence. Any significant diminution of the U.S. military presence in the East Asia-Pacific, absent a corresponding reduction in potential threats there, would risk creating the perception of a regional 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, most of whom are forward-stationed in Japan and Korea. These include an Army division consisting of two brigades and a fighter wing-equivalent of U.S. Air Force (USAF) combat aircraft on the Korean Peninsula; and a Marine Expeditionary Force, an aircraft carrier battle group, an amphibious squadron, and one and a half fighter wing-equivalents of USAF combat aircraft in Japan. This force visibly demonstrates the U.S. commitment to the region, deters aggression by potentially hostile states, and allows for rapid and 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 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 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.
- Increased naval presence, including a carrier battle group, an amphibious ready group with embarked Marine Expeditionary Unit (special operations-capable), and Tomahawk-capable surface combatants.

- 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 prepositioning equipment for a second heavy brigade and a division base in Qatar (including a tank battalion set of equipment by early 1996), maintaining the number of land-based combat and support aircraft deployed to the region, prepositioning additional stocks of preferred munitions in-theater, stationing mine countermeasures ships in the Persian Gulf, and further enhancing its program of training and exercises with U.S. 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 Latin America is growing faster than trade with any other region. The U.S. Southern Command (USSOUTHCOM) and the U.S. Atlantic Command (USACOM) provide crisis reaction forces, serve as partners in cooperative regional security, and symbolize the U.S. commitment to regional security. Potential missions for U.S. forces in the region include support to counterdrug operations, counterterrorism, noncombatant evacuation operations, peace operations, smaller-scale combat operations, and disaster relief. U.S. forces also continue to exercise with regional friends and allies, helping to build cooperative security mechanisms and encouraging Latin American militaries to support civilian control, respect for human rights, and the rule of law.

The United States will continue to operate bases and facilities in the Republic of Panama until the year 2000 and is fully committed to implementing the Panama Canal Treaty. The two governments agreed to hold exploratory talks to discuss possible stationing of some U.S. forces in Panama beyond December 31, 1999. USACOM operates a base at Guantanamo Bay, Cuba, which has proven valuable in handling migrant flows from Haiti and Cuba.

U.S. security and economic interests in Africa are not as prominent as those in other regions, and the United States has no bases in Africa. 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 helps African states, particularly the new South Africa, develop more effective capabilities for conflict resolution, peacekeeping, and humanitarian relief.

CONTINGENCY OPERATIONS

The final set of operations for which DoD must shape its non-nuclear forces involves a variety of contingencies that are less demanding than MRCs but still require significant combat forces and capabilities. Such operations range from smaller-scale combat operations and multilateral peace operations to counterterrorism activities and humanitarian assistance operations.

In some cases, the United States will advance its interests by providing military forces to selected allied/coalition operations, some of which may support UNSC Resolutions. Further, the United States will continue to participate directly in UN peace operations when it serves U.S. interests. 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 an array of major contingency operations of the following types: peace operations, disaster relief, humanitarian assistance, noncombatant evacuation, maritime escort, counterterrorism, reprisal attacks, 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 1995, such contingency operations included crisis response in the Persian Gulf; humanitarian relief, peace operations, and sanctions enforcement in and around the former Republic of Yugoslavia; enforcement of the no-fly zone over southern Iraq; humanitarian relief in northern Iraq; migrant operations in the Western Hemisphere; operations to restore democracy in Haiti; and extraction of UN troops from Somalia.

The forces for these operations are provided largely by the same general purpose and special operations forces needed for MRCs and overseas presence, although some specialized training and capabilities may be required. 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.

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 I-1

Force Structure

	End FY 1996	BUR-Based Plan End FY 1999
Army		
Active Divisions	10	10
National Guard Divisions	8+ [a]	5+ [b]
Navy		
Aircraft Carriers [c]	11/1	11/1
Airwings (AC/RC) [c]	10/1	10/1
Attack Submarines	80	45-55
Ships	359	346
Air Force		
Active Fighter Wings	13	13
Reserve Fighter Wings	7	7
Bombers	201	178
Marine Corps		
Active Personnel End Strength	174,000	174,000
Reserve Personnel End Strength	42,000	42,000

[a] In addition, 15 brigades have been designated as Enhanced Brigades.

[b] Current plans call for 42 Brigades, including 15 Enhanced Brigades.

[c] Dual entries in the table show data for active/reserve forces, except for carriers, which depicts active/operational reserve carriers.

If a major regional conflict erupts, the United States will deploy a substantial number of forces to the theater to augment those already there in order to quickly defeat the aggressor. If it is prudent to do so, limited U.S. forces may remain engaged in a smaller-scale operation, such as a peacekeeping operation, while the MRC is ongoing; if not, U.S. forces will be withdrawn from contingency 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, as well as amphibious forces, would be redeployed from the first MRC to the second as circumstances permitted. After winning 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 two MRCs as well as sustained active force involvement in sizable contingency operations.

SIZING U.S. NUCLEAR FORCES

Current and planned U.S. nuclear force structure under START II is based upon recommendations made in the Department's Nuclear Posture Review, approved by the President in September 1994. This force structure reflects the reduced role nuclear weapons now play in U.S. security strategy. However, the Russian parliament has not yet ratified START II, and it is uncertain when it will do so. Thus, the United States is protecting, at affordable cost, options to maintain U.S. strategic capabilities under START I levels until Russia ratifies START II and reductions are underway. In 2003, under START II limits, U.S. strategic nuclear forces will be comprised of the following forces:

- 14 Trident submarines, each carrying 24 Trident II submarine-launched ballistic missiles.
- 3 wings of Minuteman III intercontinental range ballistic missiles, each equipped with a single warhead.
- 66 B-52 bombers capable of carrying air-launched cruise missiles.
- 20 B-2 bombers capable of carrying gravity bombs.

CONCLUSION

In the post-Cold War era, the United States plays the leading role in organizing coalitions of like-minded states to defend and advance common interests, to promote common values and norms, and thus, to create a world in which Americans can be secure and prosper. The force structure outlined above supports this strategy of engagement and enlargement. Together, these first-rate military forces underwrite security partnerships, help shape the international environment by their presence and activities, and deter and defeat aggression in a variety of settings.

Chapter 3

CRITICAL FORCE ENHANCEMENTS

INTRODUCTION

Today's U.S. force structure is significantly smaller than the force that was necessary during the Cold War. The force structure outlined in Chapter 2 reflects the results of a wide range of analytical efforts undertaken by the Department of Defense that have further refined the results of the Bottom-Up Review (BUR). To date, follow-on analyses have upheld the basic tenets and findings of the BUR, while guiding DoD in making modest adjustments in plans and programs. U.S. forces will continue to be capable of carrying out the Administration's ambitious strategy of engagement and enlargement, provided that DoD implements the 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. In most cases, if U.S. forces can accomplish this critical objective promptly, it is far more likely that objectives in later phases of the conflict (including reducing the enemy's war-making capabilities, ejecting enemy forces from captured territory, and decisively defeating them) can be achieved sooner and at less cost and risk.

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

Advanced munitions provide tremendous leverage to military forces for halting an enemy in the initial stages of attack. Enhancements in this area are discussed below.

- The United States has greatly expanded the precision delivery capability of U.S. combat aircraft. Since Operation Desert Storm, the number of fighter/attack aircraft that can deliver precision-guided munitions against fixed, hardened targets has virtually doubled and will remain roughly at this level of capacity into the next century.
- At the same time, the development and procurement of the Joint Direct Attack Munition (JDAM) and the Joint Standoff Weapon (JSOW) will give virtually all U.S. aircraft the capability to deliver highly accurate weapons in adverse weather and at night, by relying on a combination of inertial guidance and the Global Positioning System (GPS) to guide the weapons to desired impact points.
- The Air Force has also begun procurement of the CBU-97B/Sensor Fuzed Weapon (SFW), the first of the advanced antiarmor munitions. SFW is a dispenser-delivered, wide-area, adverse-weather munition that gives aircraft the capability to disable or destroy multiple armored vehicles

in a single pass. The addition of an inertial guidance unit to the SFW dispenser (the wind corrected munitions dispenser) will allow these weapons to be delivered accurately from medium and high altitudes. The Navy is incorporating SFW as an antiarmor submunition for JSOW that will be operational in 2002.

- The Wide Area Mine (WAM), which is still in development, will be highly effective in disabling armored vehicles and will allow large areas to be sown with smart mines that should be difficult to neutralize. Based on the same design as SFW, WAM can be deployed on either aircraft or missiles. Limited stocks of the WAM should be available in FY 1998.
- The Army is improving its antiarmor capabilities as well. The Longbow fire control radar system, combined with the Longbow Hellfire missile, will give the already effective Apache helicopter even greater capability by adding a fire-and-forget weapon system and improved target acquisition and tracking, particularly in conditions involving adverse weather and battlefield obscurants. The Initial Operational Capability (IOC) is expected in 1997. In addition, the Army and the Marine Corps will begin to field the Javelin man-portable anti tank system in summer 1996. The Javelin combines fire-and-forget technology with top-attack or direct-fire modes to provide a significant increase in the antitank capability of infantry forces.
- The Army is also fielding the Brilliant Antiarmor Technology (BAT) submunition, to be delivered by long-range Army Tactical Missile System (ATACMS) missiles. This potent, deep-strike system will become operational in FY 2001 and will be capable of effectively attacking a wide range of vehicles, including heavily armored ones. An extended-range ATACMS carrying upgraded versions of BAT will be operational in FY 2003. The Army is also developing the Sense and Destroy Armor (SADARM) submunition, which can be fired by 155mm howitzers. It is scheduled to be fielded in FY 1999.
- Planned improvements in U.S. standoff attack capabilities continue. The baseline Operation Desert Storm-proven Conventional Air-Launched Cruise Missile (CALCM) is being improved with increased accuracy, a better warhead, and reduced cost. Two hundred excess air-launched cruise missiles will be modified to CALCM, with delivery expected in 1997. The accuracy and flexibility of the Tomahawk Land Attack Missile (TLAM) -- a proven weapon employed most recently against Bosnian-Serb targets -- will be increased with the development of TLAM Block IV (IOC expected in 2002). The Standoff Land Attack Missile (SLAM) is being improved through a remanufacture program to enhance its standoff range and penetration capability. The JSOW will enhance the survivability, standoff, and range (relative to older munitions) of selected U.S. attack platforms. Similarly, the Enhanced Fiber Optic Guided Missile (EFOG-M) antiarmor system, currently in advanced technology development, will provide 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. Finally, the Air Force and the Navy are jointly sponsoring a new program, the Joint Air-to-Surface Standoff Missile (JASSM), to develop a weapon with enhanced standoff capabilities. These systems should significantly increase platform survivability.

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

Battlefield Surveillance

Accurate and timely 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 depth of view and with wide-area platforms that provide continuous coverage are essential to U.S. forces' capability 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.

- The Joint Surveillance Target Attack Radar System (JSTARS) will enable U.S. forces to detect moving vehicles deep in enemy territory and across a broad swath. It will also permit forces to characterize stationary targets with its spot mode. The first operational JSTARS aircraft will be delivered in FY 1996, with the full fleet of 20 aircraft reaching the field by 2003.
- Unmanned aerial vehicles (UAVs) of several types will be able to carry a variety of surveillance sensors and provide long endurance reconnaissance over the battlefield.
- The United States is also improving other airborne reconnaissance capabilities, such as the Guardrail Common Sensor, which provides real-time signals intelligence and precise target emitter location capabilities to multi-Service sensor platforms.
- Numerous improvements to U.S. theater command, control, and communications (C3) capabilities are also underway. U.S. forces are now fielding a new, open-ended defense information architecture that will greatly enhance the timely flow of critical intelligence information and command directions throughout the theater. For example, the Common Imagery Ground/Surface System (CIGSS) allows deployed units to receive and exploit imagery from a wide range of aerial reconnaissance assets. The Joint Tactical Information Distribution System (JTIDS) provides rapid, secure, jam-resistant communications and data for theater-wide joint force operations. In addition, the Milstar communications satellite constellation will ensure secure global communications capability. The migration towards common communication links will provide fuzed, real-time information that can be shared among joint components as well as allied and coalition forces.

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 that will increase bomber survivability, sustainability, and precision weapons delivery capability. Once in place, these enhancements will enable the U.S. bomber force of B-1, B-2, and B-52Hs to attack a full range of enemy targets. When armed with the air-delivered advanced munitions previously discussed, the bomber force will be able to quickly and effectively destroy high-value targets, 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 responding to crises. These additional aircraft and crews would increase the striking power of the carriers during the critical early stages of a conflict.

STRATEGIC MOBILITY ENHANCEMENTS

An essential element to being able to prevail in even one major regional conflict (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. The first priority in the opening phase of a war would be to get U.S. forces to the fight in a timely manner. In many scenarios, U.S. forces would have no more than two weeks or so to get

to the fight if they are to support an effective defense. This places a high premium on forces that are stationed or periodically deployed forward, forces whose main equipment items can be prepositioned in or near a theater of potential conflict, and forces that can deploy from their home bases very rapidly and deliver effective combat power.

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 making substantial enhancements to U.S. strategic mobility -- most of which were first identified in the 1992 Mobility Requirements Study. These steps will better posture selected forces for early deployment to potential conflicts.

Strategic Airlift

DoD has programmed sufficient funds to ensure that its military airlift fleet remains capable of deploying and supporting forces as required. The Department plans to continue increasing U.S. strategic airlift capability, replacing its aging C-141 fleet with C-17s. Initially, only 40 C-17 aircraft were ordered, with further orders pending the correction of some of the program's major problems. Because these problems were corrected and DoD analyses indicate the C-17 best meets U.S. airlift needs, the Defense Acquisition Board in November 1995 approved the purchase of 80 additional C-17 aircraft, bringing the total buy of C-17s to 120 aircraft.

Strategic Sealift

DoD also is expanding and modernizing its sealift assets by acquiring 19 additional large, medium-speed, roll-on/roll-off (LMSR) ships and increasing the Ready Reserve Force to 36 roll-on/roll-off ships. The additional LMSRs will almost double surge sealift capacity for transporting forces and equipment from the United States to distant theaters and support the Army's afloat prepositioning program. 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.

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 1994 would have been on station within the same time frame.

Currently, three Marine maritime prepositioning ship squadrons -- 13 ships in all -- provide equipment to support the flexible employment of Marine Expeditionary Forces. These assets are strategically deployed in the Mediterranean Sea, Indian Ocean, and Pacific Ocean, with the ability to relocate to other regions as needed. Funding for an additional prepositioning ship, begun in FY 1995, will further enhance flexible maritime capabilities.

The U.S. Army has established an armored brigade set of equipment afloat which is available to be sent to either Southwest Asia or Northeast Asia. Additionally, the Army added two container ships in FY 1995 that 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 second heavy brigade and a division base in Qatar (including a tank battalion set of equipment by early 1996) and a brigade set in South Korea. Efforts continue to create an additional brigade set of prepositioned equipment in Southwest Asia and expand Air Force stocks of preferred munitions in-theater. Additionally, the Air Force is modernizing three ammunition ships in a phased restructuring so that they will contain significant quantities of ammunition needed early in a conflict.

Although not a critical force enhancement, the UN Law of the Sea (LOS) Convention ensures navigation and overflight rights that are essential to the mobility of U.S. forces. DoD strongly supports the United States becoming a party to the LOS Convention, which has been forwarded to the Senate for advice and consent. Further details are at Appendix H.

IMPROVED ARMY RESERVE COMPONENT READINESS

The Department of Defense has undertaken several initiatives to improve the readiness and flexibility of Army National Guard (ARNG) combat units and U.S. Army Reserve (USAR) forces in order to make them more readily available for MRCs and other operations. Toward this end, 15 ARNG brigades have been designated as enhanced brigades. Within the overall Army reserve component force structure, readiness initiatives will focus on these 15 enhanced brigades and early deploying combat support and combat service support units. In the ARNG, these 15 enhanced brigades will be resourced sufficiently with personnel and equipment to be ready to begin deploying approximately 90 days after each brigade's respective mobilization. For MRCs, the ARNG enhanced brigades provide additional capability to deal with uncertainty and risk. They can increase Army combat power that can be made available by reinforcing or augmenting deployed active divisions and corps. The USAR has implemented a tiered resourcing program to concentrate readiness initiatives on maintaining a high level of readiness in its early deploying contingency units.

CONCLUSION

These enhancements will substantially increase the capabilities of U.S. forces to conduct military operations in the post-Cold War era. To a large extent, the ability of the United States, in concert with regional allies, to fight and win two nearly simultaneous MRCs in the future depends on the enhancements described above. DoD will continue to ensure that funding for these enhancements receives priority in budgetary deliberations.

Chapter 4

READINESS

KEEPING U.S. FORCES READY

The number one priority of the Department of Defense is maintaining the readiness and sustainability of U.S. forces. The United States must have highly capable forces that are prepared to rapidly respond to the diverse demands of a post-Cold War world. Managing this goal is one of the Department's most aggressive and ambitious undertakings. A fundamental challenge rests in understanding what readiness really means in terms of national policy goals and what the Department is doing to assess, measure, correct, and project the readiness of U.S. forces today, tomorrow, and in the future.

The U.S. National Military Strategy outlines a broad spectrum of commitments, specifically that U.S. forces must be prepared to fight and win the nation's wars, deter aggression and prevent conflict, and conduct peacetime engagements.

U.S. forces are ready to meet these missions. To maintain the readiness of the force, the Department has encountered these challenges: develop and retain high quality people, ensure adequate readiness funding, and develop and manage a system of measuring and assessing readiness.

The first challenge to keeping a ready force is recruiting and retaining high quality people. This is becoming increasingly difficult, given the attractiveness of nonmilitary careers in an improving economy, the demanding pace of military operations, and the reduced pool of candidates for military service.

The second challenge is to make sure the Department has the right resources allocated to the right purposes in support of readiness. Even with a solid foundation of readiness funds in the DoD budget, the costs of unbudgeted contingency operations can reduce resources available to carry out training, maintenance, and other readiness-related activities.

Even with the emphasis on quality of life and ample funding to support readiness, the third challenge is to closely monitor and track budgets and plans as they are executed, to make timely corrections if problems arise, and to make thorough program decisions to ensure readiness in the future. The Department must watch with great vigilance over its force and continue to refine its ability to monitor readiness to ensure that it has both a clear, up-to-the-minute picture of the health of the force and the ability to project future readiness.

The Department of Defense is responding to each of these challenges through a series of management initiatives. Moreover, DoD is keenly aware of tomorrow's challenges and is taking the necessary budgetary and policy steps to ensure that tomorrow's joint, modernized force is ready to fight.

READINESS AGENDA

Maintaining readiness is an essential component in virtually all of the Department's activities. In general terms, readiness is the overall ability of forces to arrive on time where needed and prepared to effectively carry out assigned missions. The ability of units to be ready on time to carry out their missions, in turn, is a function of having the equipment, supplies, logistics, intelligence, and experienced people with the skills to accomplish assigned tasks.

This overarching concept of readiness is easily understood. However, upon closer examination, one finds that readiness is composed of diverse elements of organization, resources, people, professional education, and leadership. It includes the ability to train, maintain, and sustain these elements in a synergistic force prepared to meet mission-oriented goals. All these elements must be balanced throughout the defense program to ensure that the Department has highly capable forces that are prepared to execute the National Military Strategy.

The concepts, understanding, and management of readiness differ from small unit to joint task force. Readiness involves a complex range of elements that, when viewed in aggregate, depict the force's capability to operate in a post-Cold War environment of instability and new security challenges. Each Service is responsible for organizing, equipping, training, and providing materiel support, the principal ingredients in the readiness of the forces provided to the warfighting commanders in chief (CINCs). The Department of Defense provides the resources and assigns tasks from the National Military Strategy to the Services.

DoD must be able to manage readiness: understand, measure, assess, and project on a variety of levels. Successfully accomplishing these readiness management functions involves a complex set of interactive tasks that, in many cases, break new ground for the Department. The key is to identify those policy, budget, and operational levers that are integral to force readiness and can be used to ensure current and future readiness. In this context, the Department has undertaken a broad range of initiatives -- policies, budget actions, organizational structures which, taken in sum, represent a determined agenda -- to assess and actively manage the readiness of U.S. armed forces from a DoD-wide perspective.

Readiness and sustainability remain the highest resource priorities of the Department and constitute the two most essential components of near-term military preparedness. The Department is committed to ensuring U.S. forces are ready to carry out their missions. During the past year, the Department examined the core elements of readiness and how they are assessed, reported, and funded to ensure the United States has forces ready to fight now and in the future. This section depicts the concepts, initiatives, and evolving programs the Department has developed to achieve its goals.

NATIONAL SECURITY STRATEGY AND READINESS

U.S. forces are organized and trained to support the National Security Strategy. Ready forces are vital to maintaining America's leadership in world affairs. U.S. forces must be manned, equipped, and trained to deal with diverse and challenging threats to U.S. national security. They must be prepared for, and on occasion must engage in, operations that support the full spectrum of national interests:

- Fight and win the nation's wars -- the foremost responsibility that governs all U.S. military activities and stands as the ultimate guarantor of U.S. vital national interests. This commitment is manifested in the ability of U.S. forces to decisively fight and win two nearly simultaneous major regional conflicts (MRCs).
- Deter aggression and prevent conflict -- deploy and support combat forces, ranging from strategic nuclear deterrence to overseas presence missions where the costs and risks of engagement are commensurate with the U.S. interests at stake, most importantly to convince potential adversaries that their objectives will be denied and that their aggression will be decisively defeated.
- Peacetime engagements -- participate in activities to enhance regional stability, alleviate human suffering, improve coalition military capabilities, and promote democratic ideals.

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

- Time it takes to mobilize, deploy to a theater of operations, and engage.
- Military missions these forces must execute once engaged.

- Length of time these forces should remain engaged.
- Time to disengage, refit, and redeploy to meet priority missions.

Having forces that are ready to fight requires an appropriate force structure, modernized equipment, maintenance and logistics support, and the requisite trained and motivated personnel. A deficiency in any of these elements can hurt readiness, inhibiting the timing of deploying forces, and thereby resulting in a readiness gap. In managing readiness, the Department strives to maintain a delicate balance of all these crucial elements to ensure that forces arrive on time and fully capable to meet mission demands.

U.S. FORCES ARE READY

To achieve its number one resource priority, DoD has focused on the lessons learned from hollow force periods of the 1970s and early 1980s and has taken deliberate steps to prevent a recurrence. Previous incidences of force hollowness reflected a force that was, on average, less educated, not as well-trained, more poorly equipped, less sustained, and less strategically mobile. In contrast, today's forces are the best ever fielded. U.S. military forces are well-educated, receive quality training, and utilize technologically superior equipment. Recruiting high quality people is the key to this progress. The quality and capability of today's force clearly show that DoD has implemented lessons learned from previous periods of hollowness. The high readiness of the force continues with the nearly completed and carefully managed post-Cold War drawdown.

READINESS PERSPECTIVE IN A POST-COLD WAR ENVIRONMENT

Defining the Readiness Model

In recent years, the United States has committed its forces to contingency operations that posed significant challenges to keeping readiness in balance. Forces have been committed to operations in Somalia, Bosnia and Herzegovina, Korea, Rwanda, Southwest Asia, Haiti, Cuba, Peru, Ecuador, and the United States in a wide array of missions ranging from deterrence to natural disaster relief. At the same time U.S. forces have been engaged in support of the full spectrum of national interests, the United States sustains its readiness to counter major regional threats.

Keeping forces ready in peacetime to protect U.S. interests requires a delicate balance. When not involved in conflict, U.S. forces are in three basic postures: those forces that are forward deployed or stand day-to-day alert, those forces engaged in contingency operations (protecting vital U.S. interests, promoting important interests, and providing humanitarian assistance), and those training for conflict. The key to maintaining balance is to ensure that contingency operations are carried out effectively, but without placing undue burdens on training for war.

Such a readiness balance requires forces actually engaged in operations to be in a high state of readiness to carry out their assigned missions. The readiness of forces in training, by contrast, will vary considerably. Some units will be currently deployed or must be ready to deploy at a moment's notice. These are first-to-fight forces that would initially respond to a crisis. Some units are less ready. They may, for example, be recovering from overseas deployments, transitioning to new equipment, later deploying units, or in the case of many Reserve component units, between training cycles. Managing this balance involves keeping a close eye on deployed and nondeployed units to ensure they possess the appropriate resources and are ready to meet their assigned mission tasks in terms of capability and time requirements.

Joint Readiness Perspective

As military forces shrink in size and the missions they perform are becoming more diverse, the Department must place a premium on forces being able to conduct joint operations. Today's and tomorrow's forces will fight jointly; this requires a new level of cooperation. In addition to the traditional

readiness requirement of keeping individual units able to fully perform their individual functions, now these units must be integrated, across Service lines, into an effective joint force.

A chief initiative is the CINCs' specifying their missions as joint mission essential task lists (JMETLs), complete with conditions under which the tasks must be performed and the standards they expect the units or staffs to meet. This project does not change the missions that the CINCs are expected to perform. Rather it specifies the tasks in sufficient level of detail to allow staffs and units to train and fully develop the necessary level of both unit and joint readiness. This ongoing process focuses on train-like-you-fight activities and will serve to revolutionize joint training and exercises. It will eventually provide a basis to measure readiness in terms of output (ready to accomplish the specified mission) rather than today's input-oriented (ready to perform as intended by the unit design) processes.

Simulation Training

The readiness of U.S. forces is directly related to the quality of their training. While the phrase train-as-you-fight has become a well worn cliche in some circles, the ability to provide realistic joint training across all phases of military operations for all types of missions remains a formidable challenge. While the Services have made great strides in developing simulation technology that supports individual and unit training, substantially more progress is needed in providing a capability to support interservice and joint task force training. Recognizing this urgent need, the Office of the Secretary of Defense (OSD), the Joint Staff, and the Services are coordinating their efforts to create a coherent integrated plan for the use of modeling and simulation in support of joint and interservice training.

The Deputy Under Secretary of Defense for Readiness and the Joint Staff Director for Operational Plans and Interoperability, in collaboration with the Director, Defense Research and Engineering and the Services, have established a Training Council for Modeling and Simulation. The primary objective of this council is to develop and implement joint/interservice training simulation plans that represent the needs and interests of the training community. The significance of this effort is threefold. It will: (1) provide a central focus for coordinating simulation training plans across DoD, (2) provide high-level user requirements to guide DoD research and development efforts, and (3) greatly increase the cost-effectiveness of DoD investments by eliminating unnecessary duplication while improving the Services' ability to share common resources.

A major focus of the new Training Council is the Joint Simulation System (JSIMS) program. The JSIMS program represents a quantum leap over existing training technology. It will encompass the full range of missions across all phases of military operations. It will share a common architecture with other training simulations as well as analytical and acquisition related models. Finally, it will interface with actual command, control, communications, computers, and intelligence (C4I) equipment in the field. DoD has established a Joint Program Office for management of the JSIMS program and is in the process of providing staffing from each of the Services. A new program element has been established for the core JSIMS developments, and efforts are underway to coordinate related Service activities.

The Department has made a priority of exploiting enhanced modeling and simulation through distributive technology. The Department's policy for joint readiness includes proactive application of simulation technologies in the areas of joint training, exercises, and readiness monitoring. The DoD Modeling and Simulation Master Plan will be amended with a definitive description of the requirements, plans, and programs to support joint and interservice training. In addition, DoD is pursuing development of better modeling methods to improve U.S. capability to predict the interaction of forces and reduce the fog and friction of war. The net result of this coordinated effort by the Services, Joint Staff, and OSD will be

increased efficiency and interoperability, as well as improved cost efficiency, through more efficient utilization of the simulation technology.

READINESS CHALLENGES

In today's dynamic political, fiscal, and operating environments, achieving and maintaining DoD readiness goals are challenging. Some believe that in the wake of the collapse of the Soviet empire, the United States should rapidly draw down its forces, dramatically lower its defense spending, and reduce its commitments abroad. In the past, precipitous force drawdowns led to a hollow force structure. Indeed, drawdowns have characteristics that inherently degrade readiness (e.g., reorganization, personnel turbulence, uncertainty, etc.) during the transition. Maintaining readiness is central to successfully managing the drawdown.

Challenges to maintaining readiness rest primarily with six variables: personnel, equipment, training, logistics, professional development, and the financial resources to support these elements. A deficit in any one will degrade readiness. It takes resources and time to develop and sustain ready forces. Readiness is cumulative; it takes 20 years to develop senior level individual military leaders, 7-11 years to develop and field technologically superior equipment, and 1-2 years to develop a sustainment program to provide trained and ready units. A decline in resources or adequately educated and trained people will lengthen the amount of time it takes to rebuild readiness. Through its efforts to ensure a highly capable force, DoD has encountered these challenges to readiness: people, readiness funding, and staying on top of readiness. The following discussion characterizes these challenges and describes how the Department is addressing these issues.

CHALLENGE -- QUALITY PERSONNEL

Attracting/Retaining Quality People

The first challenge to keeping a ready force is attracting and keeping high quality people. This is becoming increasingly difficult, given the attractiveness of nonmilitary careers in an improving economy and demanding pace of military operations. Today, the all-volunteer force includes some of the most skilled men and women ever to wear the uniform. High quality people are the foundation of today's high quality force. The challenge to readiness is to keep it that way. A weapon system will be only as effective as the people who operate and maintain it. Recruiting and retaining quality people significantly affect readiness. The Department is meeting its recruiting goals, including quality goals, and currently enjoys high retention rates among service members. The Department has taken several steps to improve quality of life so that the Services can continue these positive trends.

Quality of life programs support readiness in three ways. First, quality of life helps the Department recruit good people by offering attractive incentives for education, health care, career advancement, and retirement, among others. Second, quality of life programs provide assurance to service members that their families will be taken care of during deployments -- an important consideration with a more mature and family oriented all-volunteer force. Third, they help to retain the best people -- well-trained people who are competent in their skills and who have high morale. The Secretary of Defense's initiative to add $2.7 billion over six years (FY 1996-2001) recognizes the importance of the quality of life of service members and its relation to the readiness of the force. The $2.7 billion for these initiatives will improve compensation, living accommodations, and family and community support.

Managing Time Away From Home: Personnel Tempo

Since the end of the Cold War, the increased pace of military operations means military people are, on average, away from home more often. Although much of the satisfaction that comes from military service

is the opportunity for individuals to do what they have been trained for -- to apply what they have learned by engaging in worthy missions that support American values and interests -- extensive deployments increase the time service members are away from their families and communities. This cannot help but impact the way military members and their families feel about serving their country. To maintain a reasonable balance, the Department is pursuing several initiatives, including:

- Maintaining a sufficient force structure. Force structure adequacy is not only tied to meeting operational requirements, but also relates to composition of the force. With a smaller force structure, the Services are carefully managing military occupational specialties, especially in low density critical areas, to ensure that requirements are met so that units have proper manning levels to meet mission tasks.
- Managing deployments creatively. While all Services have experienced high deployment rates since the Gulf War, the percentages of Army and Air Force personnel deployed have more than doubled. Traditionally, the Navy and the Marine Corps have had high percentages of their people deployed, and this remains true today. The burden of deployments, however, has not always been spread evenly within each Service. As a result, the Department is exploring options to include prioritizing commitments and rotating units on deployments -- to spread the burden of high deployment rates both in quantity and duration.
- Increased use of Guard and Reserve forces in operational missions. The National Military Strategy relies heavily on the Reserve components. In the past, the traditional view saw Reserve components as forces that train in peacetime in order to mobilize for conflict when needed. Today's military Reserve units train continuously in preparation for potential deployment at any time in response to a wide array of post-Cold War contingencies. In addition to major scenario requirements, Reserve component capabilities have repeatedly assisted the downsized active component to respond efficiently to other lesser conflicts, extended global peace operations, and other commitments to relieve day-to-day active component operational and personnel tempo (PERSTEMPO). Examples of Guard and Reserve operational contributions include use of the Reserve airlift and air refueling fleet, Special Operations Forces employed in Haiti, and the composite active, Guard, and Reserve Multinational Force and Observer battalion deployed in the Sinai in early 1995.
- Setting guidelines. Each of the Services, and each major military mission area, has its own tempo of operations. It would be imprudent to impose inflexible DoD-wide standards for how often people should be away from home station. There should, however, be guidelines to assess whether the intensity of deployments may become excessive. In the past, only the Navy had established PERSTEMPO guidelines. Now, all Services are collecting PERSTEMPO data and should have PERSTEMPO guidelines in the near future.
- Maintaining full support for all families separated due to deployment. Families need extra support, often with personal financial management or handling difficult situations when the service member is deployed. DoD family centers are equipped to help on both accounts; numerous other support systems and referral agencies ensure that families are taken care of during the course of the deployment.

Medical Readiness

Medical readiness is the cornerstone of the Military Health Services System (MHSS). It encompasses the ability to mobilize, deploy, and sustain field medical services; to maintain and project the continuum of health care resources required to provide for the health of the force; and to operate in conjunction with beneficiary health care. The MHSS supports the full array of military missions, including MRCs, lesser contingencies, humanitarian assistance, and disaster relief.

A key component of medical readiness is the experience acquired through real-world operational support missions. Over the past year, the Department provided medical support to numerous peacekeeping and humanitarian support operations around the world. These missions include maintaining a 60-bed deployable medical systems hospital in Zagreb, Croatia; medical support to the NATO Implementation Force involved in operations in the former Republic of Yugoslavia; providing care in support of migrant operations at Guantanamo Bay, Cuba; medical support in the Former Yugoslav Republic of Macedonia; and medical support for the mission in Haiti. Among the humanitarian assistance missions supported this past year were humanitarian aid in Rwanda and Zaire; support to other government agencies in Zaire during the Ebola virus outbreak; and numerous humanitarian and civic action projects around the world, relying heavily on Reserve components.

The Department also provided medical support to domestic assistance/action missions in the continental United States. Operations include assistance following the bombing of the Federal Building in Oklahoma City, Oklahoma, and the Reserve component's Arch Angel medical training and support program.

In addition to these opportunities to learn from operational missions, the CINCs and Services conduct exercises worldwide that provide additional opportunities for medical personnel to hone their skills in a realistic environment, employing the equipment and systems used to support combat operations.

In March 1995, the Department released the Medical Readiness Strategic Plan 2001 (MRSP 2001), the first comprehensive update of U.S. medical readiness strategy since 1988. The purpose of the plan is to provide DoD with an integrated, coordinated, and synchronized plan for achieving and sustaining medical readiness through 2001 and beyond. It will be used to articulate requirements and resources and for developing policies and procedures. Medical readiness will be measured against the objectives outlined in the plan.

The Department intends to continuously monitor the status of DoD medical readiness through the development and implementation of an effective oversight/evaluation mechanism. Development and fielding of the strategic plan is only one element in the overall process. Defense Medical Program Guidance will also play a key role by specifically addressing medical readiness priorities within the Defense Health Program. Together, these elements will establish a cyclic and perpetual process to identify requirements, develop policy, provide resources, and monitor success of medical readiness programs and initiatives.

The MRSP 2001 provides a medical readiness vision for 1995-2001. The vision covers 10 separate functional areas: Planning; Requirements; Capabilities and Assessment; Command, Control, Communications, and Computers (C4) and Information Management; Logistics; Medical Evacuation; Manpower and Personnel; Training; Blood Program; and Readiness Oversight. The strategic plan will be a living document that will be updated and adjusted to respond to changes in a highly dynamic environment. When a given objective is achieved, the supporting action plan will be removed and new functional areas, objectives, and action plans will be added as opportunities to improve medical readiness are identified.

CHALLENGE -- READINESS FUNDING

The second challenge is to make sure the Department has the right resources allocated to the right purposes in support of readiness. Many of the assumptions on funding become inaccurate due to shifting priorities and the lengthy budget and execution cycle. Structuring the budget to ensure readiness involves a rigorous, multistep process. For the FY 1997 budget request sent to Congress, this process began over a year ago with the Secretary's guidance to the Services and other defense components. The Secretary

directed the Services to provide enough funding in future programs and budgets to ensure their forces were ready to carry out missions at acceptable levels of risk. Underscoring the strength of this priority, the Secretary allowed the Services to break his guidance elsewhere if required to maintain readiness.

The budget development process included two other important steps to ensure that U.S. forces had sufficient readiness to carry out joint operations. The first involved direct discussions between the Secretary and the CINCs to ensure that their readiness concerns were met. Second, the Joint Staff, under the leadership of the Vice Chairman, undertook a detailed review of readiness-related funding. The results, reflected in the Chairman's Program Assessment, led to the incorporation of several important enhancements in the final budget submission.

The results of DoD's approach to getting readiness funding right from the start were incorporated into the FY 1995 budget, which involved many changes from the previous year and corrected some unrealistic assumptions. The FY 1996 budget also reflected robust readiness funding. The Department's FY 1997 budget request offers further refinements in readiness, building on progress made in the previous fiscal year. For example, levels of funding for operations and maintenance -- the major, but not sole, source of readiness funding -- indicate that DoD has maintained historic levels of readiness.

In light of the improvements made, the FY 1995-1997 budgets are balanced and realistic. Indeed, the funding provided in the FY 1997 budget will maintain adequate readiness levels in the Services, with one important provision -- the Department must receive timely funding for unbudgeted contingency operations.

Contingency Funding in the Post-Cold War Environment

Part of the fiscal challenge is to ensure that, even with a solid foundation of readiness funds in the DoD budget, the costs of unplanned contingency operations do not undercut readiness. The Department remains dependent on timely congressional approvals to fund unplanned contingency operations.

In recent years, U.S. forces have deployed around the world to perform a wide variety of operations that forced DoD to spend more than planned in DoD budgets. This situation became acutely apparent during latter FY 1994, when U.S. forces were deployed in support of several contingency operations. Acting prudently, the Department reallocated scarce resources to those forces that needed them most -- those engaged on the front lines and those preparing to execute contingencies. As necessary as these reallocations were, they diverted funds from planned activities that were often critical to the readiness of its remaining forces. Consequently, the Department suffered some difficult readiness cash flow shortages, particularly in the fourth quarter of FY 1994. These cash flow problems were brought on by high year-end demands on its forces including operations in Rwanda, Cuba, Haiti, and Kuwait. Moreover, the problems were exacerbated by receiving supplemental reimbursements only after the close of FY 1994. As a result, training and sustainment accounts for important missions were placed at risk.

The Department took aggressive measures to minimize the effects of these temporary cash flow shortages. Examples included expedited withdrawal of forces from completed missions, financial management measures to ensure the proper execution of missions, and freeing operating funds through reductions in the training, maintenance, and supply of selected units. Nevertheless, each of the Services had to selectively reduce readiness-related activities that ultimately resulted in lower unit readiness primarily for those units that had recently returned from deployments, those units that deploy later in mission plans, or those units scheduled for deactivation.

Today, the Department continues to stress its effort to prevent any reoccurrence of similar cash flow shortages in FY 1996. This perplexing problem can be partially avoided through careful budgeting of resources. The Department's FY 1996 budget reflects such planning through careful adjustments in Operation and Maintenance (O&M) funding for each Service. The FY 1997 budget includes funding for contingencies expected to carry into the new fiscal year, plus robust O&M spending.

Importantly, Congress and the Department share the responsibility to sustain a consensus on how to fund America's international commitments without degrading the readiness of its forces. DoD realizes the crucial importance of timely reprogramming activity and supplemental appropriations from Congress. When DoD does not have timely congressional approval of these requests, readiness is placed at risk. Likewise, the Department understands that timely submission of requests for supplemental appropriations and reprogrammings to Congress helps to expedite the approval process. In addition, it is crucial that the Department and Congress work closely to ensure a clear understanding on this important matter.

Evaluating Standards, Indicators, and Measures of Readiness

Understanding and managing the complexity of O&M programs and their funding is a difficult but important task. These funds can impact the current readiness of U.S. forces almost immediately. O&M funds are planned for specific programs within a year of execution and fund managers order their programs to execute according to this plan. Historically, O&M resources have been the Department's only source of flexibility or discretionary dollar assistance when financial constraints are encountered during the year. As budget execution progresses, costs become fixed and fewer dollars become available to finance the unanticipated contingencies, leaving O&M appropriations as the resource of last resort.

The Department has been working hard on several initiatives to analyze the nature of the O&M funds and to measure the impact on the readiness. The Department is exploring multiple methodologies to quantify O&M's relationship to readiness and to develop quantitative measures to forecast the impact of resourcing decisions on readiness. Developing these analytical tools is an ambitious undertaking. However, it is envisioned that this effort will be mature enough for use in the preparation, analysis, and review of the President's FY 1998 budget.

Assessment of Readiness Funding

The resources in the FY 1997 budget will provide adequate readiness for America's armed forces, provided that:

- Congress and the public support the size and allocation of the resources recommended by DoD.
- Congress supplements or replaces resources consumed by DoD in the conduct and execution of unbudgeted contingency missions in a timely fashion or if the economic projections upon which the projected budget is based prove to be worse than anticipated.
- DoD is able to quickly replenish the resources consumed in support of forces engaged in unbudgeted contingency missions.

For the outyears of the program beyond FY 1997, DoD plans to focus on maintaining adequate readiness, specifically, the elements of readiness critical to the execution of U.S. defense strategy. DoD has fully funded operating and personnel programs. At the same time, there may be significant risks to readiness as DoD plans are executed. For example, some programs in the O&M appropriations may eventually need more funds. DoD must take care to ensure that reallocating funds for these purposes do not unduly divert resources away from more direct readiness needs. The Department must also maintain a balance between current readiness and required increases in procurement and modernization funding in future budgets.

FY 1997-2001 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 within DoD today of the necessary resources to keep U.S. military forces ready to execute U.S. strategy successfully.

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

- Readiness and sustainability remain the highest resource priority of the Department.
- Service Chiefs are permitted to reallocate funds to ensure readiness.
- Readiness programming reflects 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.
- Increased use of simulations, simulators, and advanced training devices and technologies will be aggressively pursued to increase operational training effectiveness and efficiency for both active and Reserve components, while reducing requirements for field training and aiding in the planning and programming processes.

Modernization/Long-Term Capability

Technologically superior equipment facilitates combat success. Maintaining an advantage will continue to be paramount to U.S. success in future battles. Long-term capability depends, among other things, on the modernization of weapons and equipment. Recognizing the need to maintain the technological superiority of U.S. forces, the Future Years Defense Program provides procurement funding in FY 2001 that is 47 percent higher than the $39.4 billion requested in the FY 1996 budget. The opportunities for meeting United States' long-term goals lie in four areas:

- Aggressive divestiture of infrastructure.
- Effective acquisition reform.
- Widespread use of modeling and simulation to enhance training.
- Creative reengineering of how the Department conducts business.

The Department of Defense must maximize its efforts in these areas and continue to make prudent investments in recapitalization if it is to ensure that tomorrow's readiness is equal to tomorrow's challenges.

CHALLENGE -- STAYING ON TOP OF READINESS

Even with the best plans for people and resources to support readiness, the third challenge is to watch closely what happens as plans are executed and to make timely adjustments when problems arise. The Department has improved its ability to assess readiness to ensure that it has a clear picture of the health of the force. When costs were incurred for unfunded contingency operations during FY 1994, the Department knew there would be some pockets of unreadiness, but the effect that reallocating O&M funds had on force readiness could not be accurately projected. When readiness declines did occur, the readiness reporting system informed senior leaders in the Department only after many weeks had passed, which was an inherent weakness in the readiness reporting methodology in effect at the time. To correct these deficiencies, especially the ability to uncover readiness problems quickly and correct them as fast as possible, DoD implemented a number of initiatives to improve its assessment and correctional capability.

Senior Readiness Oversight Council

The first step was to create an improved forum for assessing and correcting problems in the near-term readiness of the force. This initiative used an existing body, the Senior Readiness Oversight Council (SROC), whose membership includes the Deputy Secretary of Defense, the Vice Chairman of the Joint Chiefs of Staff, the Service Chiefs, the Under Secretaries of Defense and military departments, and other senior officials with interests in readiness.

Initially, the council looked at broad plans to maintain readiness in the future. Given the events of late 1994, however, it was apparent that consideration of only future readiness was not enough. The Deputy Secretary subsequently refocused the council's attention on the readiness of the force today. He directed that each month's meeting includes a readiness assessment of U.S. forces, both today and a year into the future, by each of the Service Chiefs. The Under Secretary of Defense (Comptroller), who plays an important role in financing readiness, also became a key participant in council deliberations.

Working closely with the Joint Staff, the refocused SROC has made excellent progress in providing a forum for DoD leadership to assess and manage readiness. Since its initial current-readiness assessment in December 1994, the council has incorporated the following:

- Senior civilian and military leadership review current readiness in a monthly meeting.
- The readiness of the individual Services is assessed in a common format, with each Service's presentation helping to facilitate solutions to readiness challenges faced by the other Services. · Readiness assessments that go beyond the ratings of individual Services to consider the overall joint preparedness of U.S. force to carry out the National Military Strategy.
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Chairman's Readiness System/Joint Monthly Readiness Review

In late 1994, the Chairman of the Joint Chiefs of Staff directed the Joint Staff to build a readiness system to define, measure, and fix joint readiness. The resulting comprehensive readiness system, called the Joint Monthly Readiness Review (JMRR), combines Service and CINC assessments of the force readiness. Chaired by the Vice Chairman of the Joint Chiefs of Staff, the JMRR includes the principals of the Joint Staff directorates, the Service Deputy Chiefs of Staff for Operations, and representatives from the unified commands and combat support agencies. It is designed to examine the readiness of the armed forces to carry out the National Military Strategy, including winning two nearly simultaneous MRCs. The Chairman has the overarching responsibility to carry out the National Military Strategy. His view of readiness, therefore, requires visibility into the traditional readiness status of units provided by the Services, as well as joint readiness, and the CINCs' ability to integrate and synchronize assigned forces to accomplish their missions.

During the JMRR, the Services brief unit readiness of their major fighting organizations, and the Joint Staff Director for Operations (J-3) briefs the theater commanders' assessments of eight functional areas that are integral to joint readiness: Mobility; Joint Headquarters Capability; C4; Special Operations; Logistics/Sustainment; Infrastructure; Intelligence, Surveillance, and Reconnaissance; and Joint Personnel. In addition, the defense combat support agencies, including the Central Imagery Office, Defense Intelligence Agency, Defense Information Systems Agency, Defense Logistics Agency, Defense Mapping Agency, and National Security Agency, all participate in the JMRR. The joint review process also includes an extensive feedback process to ensure that critical deficiencies are addressed by near-term policy, operational, and/or programmatic fixes.

The review has directly enhanced the Chairman's ability to provide accurate advice to the President and Secretary of Defense on the use of force, current and projected unit and joint readiness, current force commitments, and how those commitments impact the flow of forces to warfighting commanders. Furthermore, the review's swift evolution has provided the Senior Readiness Oversight Council an essential evaluative tool for measuring joint readiness.

In general, Services and CINCs' readiness assessments provided to the council show that, overall, the readiness of military units today is holding steady where levels are already as desired, and getting better where improvements are needed. The Department can carry out the strategy for prosecuting two nearly simultaneous MRCs at today's readiness levels.

Joint Requirements Oversight Council

Another initiative undertaken over the last year is being carried out by the Joint Requirements Oversight Council, or JROC. Chaired by the Vice Chairman of the Joint Chiefs of Staff, this council includes the Vice Chiefs of the Army, Navy, and Air Force and Assistant Commandant of the Marine Corps. It is currently conducting a series of Joint Warfighting Capabilities Assessments (JWCAs) to investigate potential improvements in military capabilities.

- The assessments examine both the readiness of U.S. forces and their future ability to execute the defense strategy in key mission areas, such as ground maneuver, reconnaissance/surveillance/intelligence, and deep strike. Like the SROC and JMRR, the JROC is breaking new ground for the Department. Some of its first-time-ever activities include:
- Conducting JWCAs that integrate, in key mission areas, the collective supply of forces provided by the Services with the collective demand for them as expressed in the CINCs' warfighting plans.
- Considering the balance between programs that will keep U.S. forces ready and programs designed to recapitalize the force through modernization, so as to ensure sufficient future military capability.
- Providing, through the Chairman's Program Assessment, an evaluation of the Department's programs to ensure that they give sufficient readiness and the capability to conduct future joint operations envisioned in the National Security Strategy.
- Conducting frequent, in-depth consultations with senior service officials to ensure that advice provided to the Secretary reflects a coherent military perspective.

Joint Readiness Assessment

The evolving emphasis on the joint task force requires CINCs to dispatch joint force packages to meet a wide variety of missions on very short notice. In preparing for deploying troops on contingency operations, the CINCs have noted they do not have an effective mechanism for assessing the joint readiness of the forces assigned to them. While each Service has its own system to assess readiness, there are clear differences in how each Service prepares its respective forces and assesses their suitability for deployment. However, this training does not evaluate the joint capabilities required by deployed forces in the event of emergent contingency operations. Thus, the CINCs need a system that can depict the overall readiness posture of their forces so that they can provide the optimum force package to meet the National Command Authorities' goals.

Seeing a critical deficiency in the need to track the readiness of its forces, the Department has undertaken a number of initiatives to better assess joint readiness. DoD, in particular the Defense Advanced Research Projects Agency (DARPA), is developing an Advanced Concept Technology Demonstration (ACTD) that utilizes an automated database to access existing databases in order to give the CINC an accurate, near

real-time snapshot of his forces and their readiness posture. The system will provide the ability to integrate major unit readiness Status of Resources and Training System (SORTS) data with the Time Phased Force Deployment Data (TPFDD). These two diverse data systems are being linked by an DARPA-developed Object Architecture that facilitates rapid data manipulation and a response in minutes which previously took days. While this effort is in the developmental stage, these types of initiatives are indicative of the Department's intent to move forward in the readiness assessment arena.

Service Readiness Updates

The Deputy Under Secretary of Defense for Readiness meets regularly with Service representatives to receive in-depth readiness assessments of their forces. The briefings cover current readiness of units, highlight deficiencies, outline solutions, discuss new initiatives, and provide a forum to discuss overall Service and joint readiness issues. These proactive meetings provide further insight into tracking and assessing the current and future readiness of U.S. forces.

Current-Readiness Spokesperson

Another initiative was designed to ensure that the public and Congress have a prompt, clear, and candid picture of the readiness status of U.S. forces. To accomplish this, the Deputy Secretary has asked the Vice Chairman of the Joint Chiefs of Staff to serve as the Department's spokesperson on current readiness. The Deputy Secretary's charge to the Vice Chairman is to provide an unvarnished picture of the U.S. military's readiness and to foster a fully informed discussion of any actions needed to correct problems that may arise.

Defense Science Board Task Force on Readiness

A fifth initiative, now completed and which served as the foundation to many of the current readiness initiatives, was the creation in May 1993 of the Readiness Task Force to provide the Department's leadership a source of independent advice on readiness. The task force provided a significant impetus to the Department's efforts to manage readiness. Comprised of eight retired four- and three-star officers under the lead of retired General Edward C. (Shy) Meyer, U.S. Army, the task force focused primarily on bringing a greater joint-force perspective to readiness activities, and especially on increasing CINC involvement in the resource allocation process. The task force published a formal report in June 1994, providing observations and recommendations to the Secretary, and served as the lightning rod for many key issues in the management of readiness. The panel continued to meet quarterly to assess readiness issues and review progress made in implementing the recommendations from its report. The Task Force held its final meeting in August 1995, and concluded its efforts with a report to the Secretary that included an updated status on its previous recommendations.

CONCLUSION

DoD continuously faces new challenges to readiness as the world changes. Based on past experiences, America's vigorous responses to each, and the valuable lessons derived, U.S. forces today are ready to fight -- ready to get where they are needed, on time, to carry out the nation's tasks.

For FY 1997 and beyond, the Department will maintain the readiness of its forces to carry out the National Security Strategy. The policies and programs enumerated in this section demonstrate the continued initiative and energy with which the Department is addressing these challenges and will set the stage for ensuring readiness for the future. Such efforts rest with the shared responsibility between Congress and the Department. With approval of these proposals, particularly timely funding for contingency operations, the United States will continue in the future to have the world's best trained, best equipped force run by the world's best men and women.

Chapter 5

QUALITY OF LIFE

INTRODUCTION

Protecting the quality of life (QOL) of America's service members is not only the right thing to do, it is critical to preserving military readiness. Readiness depends on attracting top quality people and retaining them after they have developed technical and leadership skills. To do so, DoD must offer not only challenging and rewarding work, but also an appropriate quality of life, a term used to encompass the entire package of compensation, benefits, and work and living environments for military service personnel. DoD must provide for the basic needs of both service members and military families, and recognize the aspirations they have for themselves. To accomplish this, the Department is designing quality of life programs to address both present and future needs.

AN AMBITIOUS APPROACH TO QUALITY OF LIFE

In FY 1995, Secretary of Defense Perry announced an ambitious plan to improve and institutionalize quality of life for service members in three critical areas: compensation, housing, and community and family support. In February 1995, President Clinton announced that he was adding $25 billion to the defense spending plan to provide more funding for readiness and to improve quality of life programs. The Secretary and senior military leaders believe these steps are needed to sustain healthy levels of recruitment, retention, and morale that are necessary to maintain a ready, high quality fighting force.

To support this focus on military quality of life, $7.7 billion of President Clinton's $25 billion program increase will fund pay raises for military personnel at the full rate authorized by law through the end of the decade, an unprecedented commitment. Secretary Perry added an additional $2.7 billion to the Future Years Defense Program to increase the Basic Allowance for Quarters, initiate a new Cost of Living Allowance for high cost areas in the United States, improve housing, expand child care, bolster recreation programs, and enhance family violence prevention programs.

In addition to targeting these high priority concerns, the Secretary of Defense also established a Quality of Life Task Force of outside experts to provide further recommendations for improving housing and the delivery of community and family services, and for reducing the time service members spend on deployment, otherwise known as personnel tempo (PERSTEMPO). The Task Force, chaired by former Secretary of the Army Jack Marsh, issued its report on October 19, 1995, outlining a series of observations and specific recommendations to improve the lives of men and women in the armed services.

As a complement to the Task Force, Secretary Perry chartered an internal Quality of Life Executive Committee, chaired by the Assistant Secretary of Defense for Force Management Policy, to begin work on improvements to quality of life and to review task force recommendations for implementation. While awaiting the Task Force results, the Executive Committee made progress in many quality of life areas which are low cost, but have a high payoff. These include expanding space-available travel opportunities for family members, reengineering the way personal property is shipped to reduce damage claims and improve services, diverting resources to maintain a robust nursing presence in DoD overseas schools, and establishing an aggressive program for meeting the special needs of adolescents and their parents in military communities.

COMPENSATION AND BENEFITS

The Department has long recognized the importance of an appropriate level of compensation in sustaining a robust quality of life program. The military compensation package is made up of both pay and nonpay benefits -- the components of a standard of living. In the area of pay benefits, the Department has addressed four initiatives. Operating together, these four initiatives serve to stimulate retention which, in turn, contributes to the operational readiness of U.S. forces.

Pay Raises

The Administration has funded the maximum pay raise for military personnel authorized by law through FY 1999. This commitment of $7.7 billion reflects the recognition that adequacy of military pay is essential to attract and retain high quality personnel. Individuals deciding whether to join the military typically compare the pay and other benefits available in the military with those of the private sector. While the military offers many benefits, like medical care, it is very important that military pay, the most visible element of military compensation, be competitive with private sector pay. This allows recruiters to focus on the benefits and rewards of military service and continue to enlist high quality and motivated young men and women.

Similarly, retaining the best members of U.S. forces depends on giving them the ability to provide their families with a decent standard of living -- and pay is the most important factor in determining living standards. DoD's commitment to the maximum pay raise sends a very positive message to uniformed personnel that their country truly values their service and recognizes the unique hardships, obligations, and dangers of military service.

Improved Quarters Allowance

Over two-thirds of military families reside in civilian communities. These families receive housing allowances which were intended by Congress to cover 85 percent of their housing costs. In 1995, housing allowances cover less than 80 percent of service members' out-of-pocket housing expenses. The Department and Congress have funded an additional 2.8 percent increase in housing allowances for 1996 which will cover more than 80 percent of out-of-pocket costs for the first time since 1985.

Military Retired Pay

Military retirement pay is a critical element of the overall military compensation package. Service members want to know that the retirement benefits they were promised when they joined the military will be there for them when the time comes. The Administration believes it is imperative that the United States keeps faith with men and women in uniform. Unfair changes to the retirement pay system amount to broken promises, and have a seriously negative effect on retention of quality people and the morale of the forces. That is why the President spoke out strongly against a proposal that would have broken faith with past commitments to U.S. service members. The Department strongly supports Cost of Living Adjustments to military retirement pay, thus maintaining the commitment to provide a measure of income security for those who complete military service careers.

Continental United States Cost of Living Allowance

At present, 30,000 military families are assigned to 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 partially compensated under housing allowances. Assignments to

areas such as Long Island, New York, or Los Angeles, California, place an undue financial burden on military families. The National Defense Authorization Act for FY 1995 authorized the CONUS Cost of Living Allowance to assist military families residing in high cost areas. The Department began compensating military members experiencing these high costs in July 1995. This increase will boost the average monthly pay in high cost areas by $40, and in some cases as much as $167 per family.

Commissaries

The commissary is an important element of the military nonpay compensation package and a critical aspect of quality of life. Commissaries help support the standard of living for service members stationed both overseas and in the United States. Overseas, military commissaries are often the only source of American products and are the only convenient source in remote areas of the United States. Commissaries affect income through savings on purchases of food and household items for the military member and family. Surveys show patrons 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. Military members value the commissary as one of the most important elements of nonpay compensation. As of October 1995, there are 201 commissaries in the United States and 111 overseas. Commissaries, and the savings they offer, 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 the government understands the special needs of the personnel it values so highly.

Off-Duty Education

Another important nonpay military benefit is off-duty, voluntary education, which contributes to individual growth as well as to the quality of military personnel. Programs offered to service members help individuals to continue their education on off-duty time or to increase their proficiency and competitiveness in their military career. Use of tuition assistance for college programs continues to increase even as the size of the force decreases. In FY 1994, service members received $134 million in tuition assistance for college-level courses, including Navy's Afloat Program. Preliminary figures for FY 1995 indicate that funding was at slightly increased levels, about $138 million. Course enrollments and degrees earned are shown in Table II-1. These voluntary education programs are essential in meeting the needs of motivated young people who gravitate towards careers that offer opportunities to advance and grow.

Table II-1

Voluntary Education Program (FY 1995)

Programs	Course Enrollments	Degrees Earned
High School/GED	485	High School/GED Diplomas 266
Undergraduate	519,878	Associate Degrees 15,501 Bachelors Degrees 9,818
Graduate	84,643	Master's Degrees 10,701 Doctorate 20
Functional/Basic Skills	36,593	N/A
DANTES Testing *	227,580	N/A

* Includes tests taken by Active Duty, Reserve, and National Guard Personnel.

The QOL Task Force found that training and education are most frequently cited by survey respondents as reasons for enlistment. The Task Force focused on tuition assistance and distance learning. It found that there are differences between tuition assistance benefits offered by the Services. The Department is in the process of establishing a minimum tuition assistance standard. Also, the Task Force emphasized that distance learning, especially for deployed service members, should be a priority. The Department will explore the feasibility of establishing distance learning capabilities in education centers worldwide.

PERSONNEL TEMPO

As part of the quality of life review, the Department looked at the demands made on personnel, especially time away from home. The Quality of Life Task Force made several observations and recommendations which will be reviewed for their potential to help reduce personnel tempo and turbulence. Additionally, the Department continues to support programs aimed at increasing the stability of families despite requirements for service member deployments. The Department's goal is to find a balance between mission and training requirements and service members' needs to spend adequate time with their families. To accomplish this goal, the Quality of Life Executive Committee will fully evaluate Task Force and internal recommendations which include expanding use of Reserve components to reduce the personnel tempo for the active force and increasing contractor support of certain functions.

HOUSING

The Secretary of Defense has placed special emphasis on improving the overall quality of housing for service families. There is a direct relationship among readiness, retention, and quality of life. To the extent that the Department encourages or directly provides quality housing for both unaccompanied and married service personnel, it will materially improve job performance and satisfaction, improve the retention of quality individuals, and through these means, sustain the high levels of force readiness needed to meet the Department's national security missions. The Army has an expression, "You enlist the individual, but you reenlist the family." Both the Defense Science Board's Quality of Life Task Force and the Department's own Quality of Life Executive Committee have focused on measures to redress long-standing problems in the living conditions of too many service members, both on and off post.

Near-term goals, and in many cases accomplishments, include:

- Development of a range of housing procurement tools that will make the Department a more efficient consumer of housing by acting more like a private sector company. These authorities all have the effect of leveraging limited DoD resources in order to accelerate the acquisition, replacement or renovation of bachelor or family housing, both on and off post. They include the ability to enter into partnerships; guarantee loans, occupancy rates, and rents; and take advantage of commercial standards in both construction and housing management. These authorities were provided in the National Defense Authorization Act for FY 1996, and are being implemented on a prototype basis by the Services with the assistance of a joint Housing Revitalization Support Office.
- Review and elimination of policies and procedures that have tended to impair the effectiveness of the Department's housing delivery system. To the extent that these obstacles are statutorily based, the Department will pursue legislative relief.
- Examination of additional tools that could help reengineer the Department's housing delivery system in light of high costs; inability to provide affordable, quality housing options on or off post; and the pressing need to solve this problem in the near term within the Department's resource limitations. This has led to a careful examination of the concept of transferring some or all of the Department's housing assets and their operation to nonprofit corporations. Such a

structure could improve efficiency and effectiveness by taking advantage of private sector real estate expertise, as well as commercial methods of financing, procurement, and management. The Department is examining this operational concept and supporting legislation that could be proposed to Congress during the 1996 legislative cycle.

Family Housing

Approximately one-third of military families live in military family housing. Much of this housing is in desperate need of repair or revitalization. But two-thirds of military families live off post. For many of these families, housing allowances are not in line with commercial housing costs. This imbalance can force these families to live in inadequate housing. The Department has found that housing problems, whether on or off post, have a material effect on reenlistment decisions. The military family housing budget for FY 1996 contains an increase of over $500 million to address these problems. This sum includes $22 million for private sector housing ventures. This initiative is described further in the Installations and Logistics chapter.

Bachelor Quarters

Housing for single military members is as important as for married members. About a half a million single service members live in military quarters. The Department wants to replace run down, cramped buildings with quality residential facilities. To initiate this process, the Department has adopted a new construction policy which increases the barracks/dormitory standard living space by over 31 percent, from 90 square feet to 11 square meters of net living area per living/sleeping room.

The barracks repair, maintenance, and construction program budgets were increased in FY 1996 through the Secretary's QOL initiative. Congress then enlarged that budget further, for a total increase of $673 million. In FY 1997, the Department will continue to improve its barracks. Its budget request for barracks revitalization, construction, and maintenance increases funding by about 20 percent above Service requests. This QOL initiative will improve approximately 7,000 additional barracks spaces above the 42,000 spaces previously programmed. Almost $2.5 billion has been programmed from FY 1996 through FY 2001 for this important program.

COMMUNITY AND FAMILY SUPPORT

In the area of Community and Family Support, the Department provides social service, recreational, and education programs wherever military families are stationed worldwide. While these programs mirror those found in civilian communities, the Department has adopted goals and measures in 24 community and family support program areas. These goals and measures to be fielded in early 1996 will provide a road map for quality of life in the Department and move the Services towards equity across installations and Services; ensure programs are driven by demand and meet the needs of the military lifestyle; and be benchmarked against the best of the civilian community. At the same time, the Department has taken action to improve the capability of tracking funds and improving consistency and accountability in programs and budgets.

Child Development Programs

One special area of interest this past year has been child development programs. Child care is a critical quality of life issue for military families, particularly very young families. Over 65 percent of military spouses are in the labor force; the majority of these spouses report they work just to make ends meet. The number of spouses in the labor force is up 11 percent in the last seven years. During March 1995, DoD

reassessed the need for child care. Currently, military families have over 299,000 children, ages birth through 12, who need some kind of child care. The Department is able to meet about 52 percent of this need with military child development programs. Currently there are 155,311 spaces at 346 locations. These include 644 child development centers, 9,981 family child care homes, and school-aged care located in youth facilities, schools, and other community support facilities. During the past year, a Secretary of Defense initiative added over $38 million to expand child care. DoD's short-term goal is to meet 65 percent of the need, and expects most of the growth will come in school-aged care spaces. The Department's ultimate goal is to meet 80 percent of the need.

In response to congressional interest in outsourcing, as well as acknowledging that DoD is nearing maximum potential to meet child care needs on bases, the Navy and the Defense Logistics Agency were designated to serve as executive agents for outsourcing child care. They are conducting two evaluation tests. One is to contract with civilian child care centers in five locations (San Diego, California; Norfolk, Virginia; Jacksonville, Florida; Seattle, Washington; and Honolulu, Hawaii) to buy down the cost of spaces for military families in these locations. Secondly, the Defense Logistics Agency will be testing the outsourcing of the management of a defense-owned child care facility in Dayton, Ohio.

Family Advocacy Programs

The Department's continued turbulence related to increased PERSTEMPO has increased stress and the potential for family violence. The Department has been aggressively pursing efforts to reduce the potential for child abuse in military families by providing assistance to new parents and families of first-term service members. The New Parent Support Program was implemented in accordance with the recommendation from the General Accounting Office, the U.S. Advisory Board on Child Abuse and Neglect, and the National Committee to Prevent Child Abuse. This program is designed to prevent child abuse by providing parents with education and support around the time their first baby is born, including prenatal and postnatal home visiting services. Such programs also have the potential to reduce spouse abuse, since the highest risk for spouse abuse occurs during pregnancy and immediately after the birth of a child. Increased funds from Congress in FY 1995 support creating 114 New Parent Support teams worldwide.

New Parent Support Programs in each Service offer basic support services to all parents who request services, with more intensive services offered to first-time parents, young parents, single parents, parents with disabled or premature infants, and bicultural or isolated families. Each New Parent Support Team offers a set of core services to every expecting family, including a prenatal hospital visit and assessment, one prenatal home visit, postnatal visits in the hospital and to the home, and education and support groups. Written and observational screening techniques are used to assess parenting adequacy and family environment for those families accepting services. Families with special needs and high-risk families are referred to the appropriate community support program for additional services.

Morale, Welfare, and Recreation (MWR)

Morale, welfare, and recreation programs create the American hometown wherever American troops are stationed around the world. Small MWR programs also deploy with units to provide needed respite and recreation during contingency operations. Programs such as fitness centers, libraries, sports and athletic programs, youth centers, clubs, bowling facilities, and a wide variety of other recreational and social activities are structured to give service members and families recreational opportunities on installations similar to those they might find back home. Of all the major programs offered by MWR, physical fitness is a priority program. The Quality of Life Task Force specifically addressed the mission importance of MWR activities and addressed the need to build more fitness centers and expand their operations and

services. Surveys of service members indicate a strong desire for good quality places to work out, and many view fitness as recreational as well a critical part of their job. In recognition of the Quality of Life Task Force recommendations, but also as an ongoing priority, the Department will conduct a thorough review of physical fitness facilities, to include equipment, the hours of operation, and their location to ensure they are readily accessible to junior enlisted personnel and of high quality. Much progress has been made as the Navy improves fitness centers and libraries on ships and the Marine Corps has forged ahead with major improvements in staffing, equipment in fitness centers, and in libraries.

The Secretary's FY 1996 quality of life initiative provides $194.7 million over five years to aid the Services in achieving better comparability of MWR programs and services across Services. DoD is working to achieve the minimum baseline of $295 per capita established in FY 1995 in all Services.

With the near completion of the drawdown and restructuring of the military, the Department is concentrating on revising policy for MWR programs. This long-standing effort will consider alternative methods to deliver the programs while increasing oversight and enforcing standards for an equitable minimal level of support by each Service.

Continued quality of life initiatives for the MWR programs have focused on making all aspects of the programs more efficient through increased initiatives to become more businesslike in both operations and financial management. The MWR programs continue to identify and implement innovative solutions for program delivery. Exchange service programs are also a vital part of the MWR program. The exchanges provide not only value and distinction in both merchandising and service to their patrons, but also are important sources of revenue to support MWR programs. In the past year, exchanges have undergone significant restructuring to reduce overhead and increase service and profits.

Relocation Assistance Programs

Research indicates that relocation is one of the most stressful events in the lives of military families, especially for first-term families and for those with young children. Nonreimbursed, out-of-pocket relocation expenses place a major strain on family resources. Over the past three years, significant strides were made in standing up Relocation Assistance Programs (RAP) to alleviate some of the negative effects of frequent moves. This year, DoD estimates there will be over 800,000 moves, with first-termer moves accounting for approximately one-fourth of these. To assist, RAP provides relocation planning and counseling sessions to individuals to better prepare them for their new home. Last year, RAP provided over 20,000 briefings and 219,000 Relocation Planning Sessions to over 443,000 attendees. These services are available at over 313 locations worldwide. In addition, the Standard Installation Topic Exchange Service (SITES) will be available in a new version in 1996, including video capability to over 300 installations. SITES will also be available via Internet by end of FY 1996.

Base Realignment and Closure Quality of Life Assistance

Geopolitical changes brought about by the end of the Cold War necessitated downsizing the active duty force and a corresponding reduction of the supporting infrastructure. Living and working on Base Realignment and Closure (BRAC) installations is a major source of added stress for service members, their families, and civilian employees. Leaders must maintain readiness, accomplish the new mission of closure, and provide quality of life programs and services, even as they face diminished resources, staffing shortages, and the turbulence associated with closure. Unaddressed QOL issues become a drain on installation resources. The Department will identify existing and needed resources and disseminate best practices for QOL services throughout the closure process. Other initiatives include establishing an electronic bulletin board, creating a central repository of BRAC QOL experts and resources, and

developing a commander's installation survey instrument. The Department's goal is to minimize the stress of closure by sustaining functions through innovation and community collaboration.

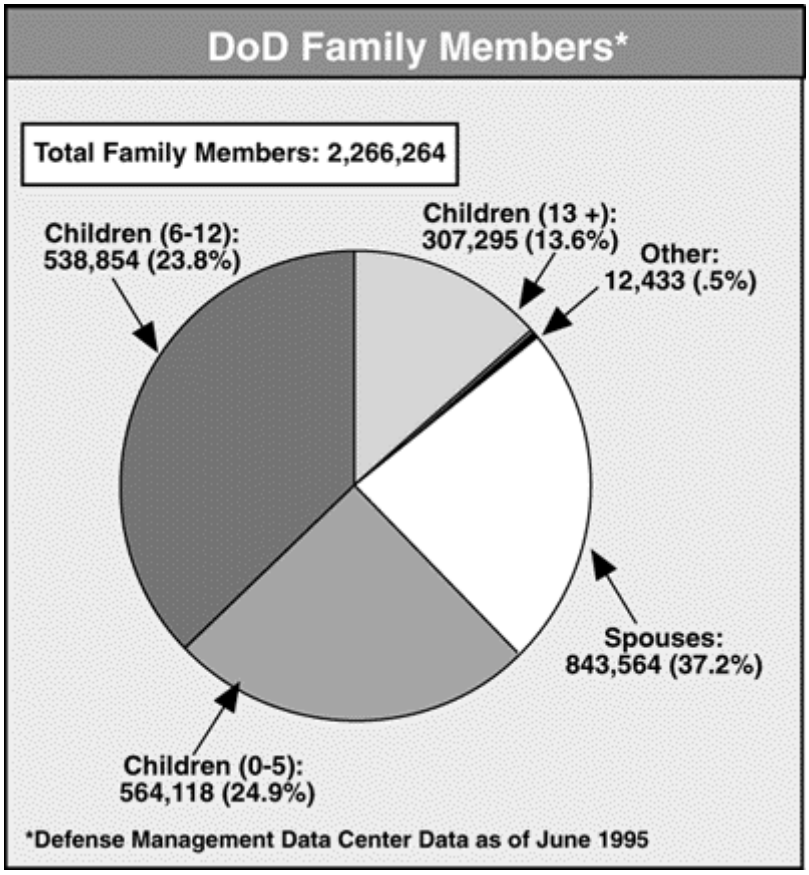
The Department's recent policies allowing exchange operations and MWR programs to continue on BRAC installations under specific situations are clear acknowledgment of the need to continue to provide these important nonpay benefits to service members as installations are closed or realigned. Department policies now also allow for exchanges and exchange marts on closed installations that have reserve populations, while clearly stating these facilities cannot be supported with appropriated funds and must be profitable.

Family Centers

There are 313 family centers throughout DoD, serving as cornerstones to provide information and respond to the needs of 1.6 million military members and 2.3 million family members. Family centers provide single service members and married service members and their families with a host of educational, preventive, and social programs, as well as information to assist them in establishing ties quickly within a new community. Family centers focus on reducing the amount of time a member is absent from his or her unit for family responsibilities and assists in decreasing the amount of time it takes a family to adapt to a new environment. Services at family centers include providing single and married service members and their families with information referral, deployment support, crisis response, relocation assistance, transition assistance, volunteer programs, personal financial management, classes and counseling assistance with employment, elder care information, family readiness, and various other counseling assistance programs that assist the military member and their families, especially during deployment.

As troops departed for Bosnia and Herzegovina, the Department provided them with the best training, the best equipment, and the best technology of any fighting force in the world to help them accomplish this peacekeeping mission. Family Centers, in conjunction with civilian support agencies, mobilized support systems for military families. Lessons learned from previous deployments show that the number one issue for families is the need to be informed. That flow of good, accurate information, combined with support and comfort from family support systems, helps families cope with challenges they face during deployments. The following support systems were provided:

- Family Readiness Training (pre-, ongoing, and post-deployment information briefs) and around-the-clock support for families in Europe.
- Five hotlines in Germany to assist families (Bad Kreuznach, Baumholder, Heidelberg, Mannheim, and Kaiserslautern).
- Mobilization of the Red Cross with deployed troops to maintain emergency communications.
- Bosnia Home Page accessible through Internet.
    - Up-to-date information about the role of the U.S. military in Bosnia and Herzegovina.
    - Articles on items to send to deployed service members.
    - Information on how to send messages to deployed troops.
- Military Family Center Computer Interconnectivity to connect Reservists to family support systems and information on nearby installations.



Model Communities (Youth Initiative)

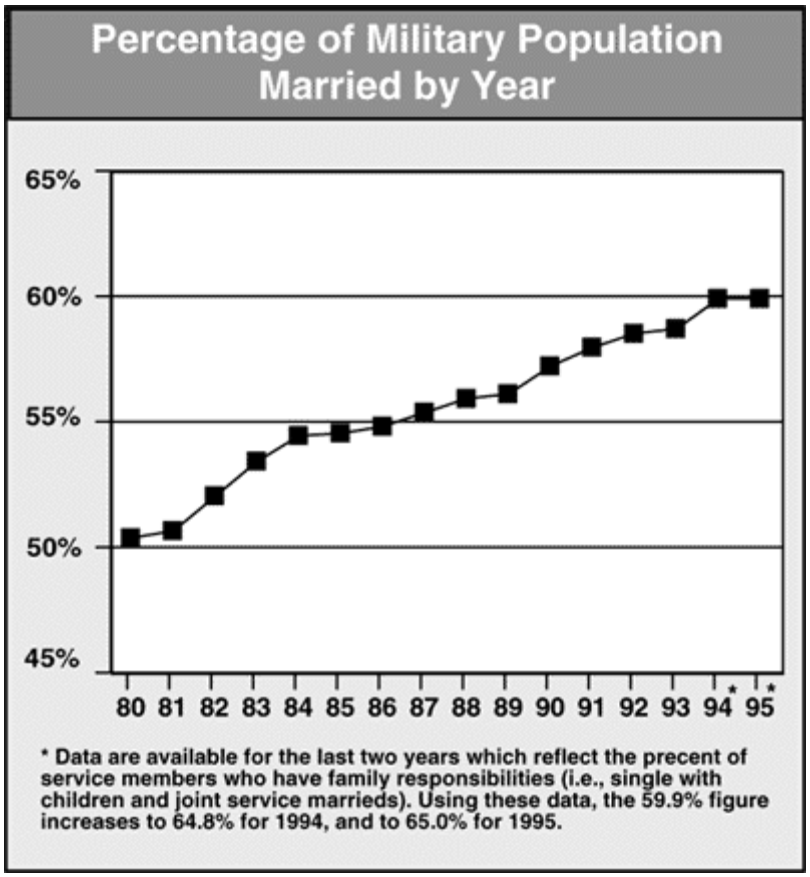
In the spirit of reinventing government, DoD established a model communities incentive award program to encourage installations worldwide to take responsibility for the problems of youth and their families. Each participating installation submitted proposals which defined their local needs, described a plan to meet those needs, and indicated how they will manage their solutions. The 20 winning installations, selected from almost 150 submissions, will serve as test projects for new ideas and as models for military bases around the world. Proposals were submitted from all four Services and represented installations around the world. The winners received up to $200,000 per year for a three-year period.

Spouse Employment

Spouse employment is an important quality of life and economic issue for the military family and a driving force for other programs, such as child care and relocation assistance. The increase in the number of spouses in the labor force over the last 10 years is indicative of this change. Currently, 65 percent of all military spouses are in the labor force. Another key demographic factor is the increasing number of civilian male spouses. Survey data reveals 65 percent of active duty service women have civilian spouses in the labor market. The rank of the service member appears to be a significant factor in a spouse's decision to become employed. The lower the rank, the more likely it is that the need for money for expenses is a major contribution in the decision of the spouse to become employed.

Based on the increased importance of spouse employment as a quality of life issue for military families, DoD held a policy forum in June 1995 to examine employment issues facing military spouses. Attendees

included commanders, academics, and spouses with a variety of employment backgrounds. The forum developed recommendations for DoD on how to assist military spouses seeking employment.



The demographics of today's force reflect that over one-half of military members are married. The percentage of married members increases to approximately two-thirds of the force when the focus is on career personnel, or senior enlisted and senior officers.

This increase in married members among the career force also reflects a change concerning what is important to these spouses. The proportion of spouses in the labor force increased from 54 percent in 1985 to 65 percent in 1992, with the largest movement into the labor force being spouses of enlisted personnel.

Armed Forces Professional Entertainment Overseas

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 service members at military installations 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. 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 Bosnia and Herzegovina, Haiti, the Former Yugoslav Republic of Macedonia, Croatia, or Southwest Asia. In FY 1995, the AFPEO sponsored 100 noncelebrity tours and 27 celebrity United Service Organization/DoD tours. These tours performed an estimated 3,000 shows, entertaining over 300,000

service members and their families. This small but vigorous program touches the lives of troops overseas, when they most need it.

Department of Defense Dependent Schools

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

DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS OVERSEAS

Department of Defense Dependents Schools (DoDDS) overseas will support 86,000 students in FY 1997. For school year 1996, schools in Europe and the Pacific have been 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 and American College Test 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 mathematics 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 test bed 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 Individuals with Disabilities Education Act.

In support of the children and youth of service members in Bosnia and Herzegovina, dependent schools overseas are implementing assistance groups with certified counselors, school psychologists, and social workers. These assistance groups will counsel children and help them cope with parents being away from home.

DEPARTMENT OF DEFENSE DOMESTIC DEPENDENT ELEMENTARY AND SECONDARY SCHOOLS

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. These schools provide education to approximately 33,000 eligible dependents residing on 16 military installations in the continental United States and in Puerto Rico. The schools have locally elected school boards that 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.

Every American child deserves a quality education, including the children of military service members. Department schools must allow the children of servicemen and women access to a school system that will deliver an education program equal to the best public school systems in CONUS, and one that will prepare students to compete in a global economy.

Chaplain Services

Chaplain services exist first and foremost to provide religious ministry and ensure the constitutionally mandated free exercise of religion within the military. They are a mission essential key to readiness, linking service members, their families, and support services throughout the Department. Military chaplains provide for the religious and spiritual needs of deployed service members worldwide; they extend pastoral care to family members who remain at home; and they offer professional assistance, including confidentiality, to all. Chaplains serve 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. The specialized ministries of military chaplains are integral to the readiness, health, and well-being of U.S. military personnel and their families.

Transition Support and Services

The consideration and assistance given to over 300,000 service members 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 service members and their families to make a successful transition to civilian life. Transition Assistance Programs save the Department as much as $150 million per year in unemployment insurance costs.

Each 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, service members made 724,964 visits to transition offices for pre-separation 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 service members and spouses participated in 3,686 workshops. In one outstanding example of seamless government, DoD, DoL, and VA implemented the Service Members 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 were placed in job training under this program. Also, a new program, administered jointly by DoD and the Department of Justice in 1995, promoted the entry of qualified service members 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 service members 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 service members' 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 are registered, with hundreds being researched for inclusion. Since June 1994, 69,751 separating personnel have registered.

DoD also provides additional benefits for involuntarily separated military members and their families, and to certain voluntary separatees. Examples include extended health care and extended commissary and exchange privileges.

Troops to Teachers Program

Troops to Teachers is a teacher and teacher's aide placement assistance program designed to assist separated service members, 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 dedicated veterans into schools serving a concentration of students from low income families. DoD received 10,684 applications for this program and began placing departing service members in teaching positions over the past summer. Currently, over 857 individuals are teaching in school districts across the country; 1,488 selectees are in training in 35 states. One-third of participants are minorities, and one-half have a background in mathematics and science.

CONCLUSION

Secretary Perry has made quality of life one of his highest priorities. A standard of living that demonstrates the value the nation places on those who defend its freedoms is critical to recruiting and retaining a high quality, well-trained, and motivated force. The improvements planned for quality of life reach out to each and every service member. They represent an enormous commitment to people -- the foundation of military readiness.

Chapter 6

THE COMMISSION ON ROLES AND MISSIONS

INTRODUCTION

The debate on the roles and missions of the U.S. armed forces predates the creation of this Department. However, recent developments, including a rapidly changing national security environment and growing pressures to reduce the defense budget, have lent renewed urgency to finding solutions for roles and missions concerns. The creation of the independent Commission on Roles and Missions of the Armed Forces (CORM) in early 1994 represented the latest effort to address these issues. This commission delivered its final report, Directions for Defense, to the Department of Defense and Congress in May 1995.

The Commission's contributions to the long-lived roles and missions debate were significant: it argued that the terms of the roles and missions debate should be focused on the needs of the commanders in chief (CINCs), on the capability of their forces to carry out joint operations, and on many of the Department's support activities -- not on the capabilities of the individual Services. This led the CORM to propose several measures to increase the effectiveness of joint military operations, and in so doing, challenged the Department to move beyond the reforms of the Goldwater-Nichols legislation, now a decade old. The Commission also recommended that the Department of Defense implement more vigorously Òthe long-standing national policy of relying primarily on the private sector for services that need not be performed by the government" and reengineer the remaining DoD support organizations.

In addition to recasting the roles and missions debate in more meaningful terms and suggesting a major change in the conduct of support activities, the CORM also offered a comprehensive set of more than 100 specific recommendations. The Department's evaluation of these recommendations -- consistent with the imperatives to maintain readiness, enhance joint military capabilities, sustain needed force structure, and ensure U.S. forces are modernized -- revealed substantial congruence between the broad thrusts of the CORM's proposed reforms and actions already underway within DoD. Not surprisingly, the Department accepted approximately two-thirds of the Commission's specific proposals for implementation and, except for a few which were rejected, asked individual organizations or task forces to study and develop specific recommendations regarding the remaining initiatives.

To oversee the implementation of key CORM recommendations accepted by the Department and to ensure that DoD maintains a high-level focus on future study of most of the other recommendations, Secretary Perry created the Roles and Missions Senior Advisory Group (SAG). The SAG is chaired by the Deputy Secretary of Defense and is composed of the Under Secretaries of Defense, Vice Chairman of the Joint Chiefs of Staff, Under Secretaries of the Military Departments, Vice Chiefs of Staff of the Services, and senior representatives from the Office of the Secretary of Defense (OSD). Under the SAG's supervision, the Department has already made significant progress in acting on key recommendations affecting readiness, joint operations, force structure, and modernization. During the first half of 1996, significantly more progress is expected.

The following represents the first of three progress reports that will chart the Department's implementation of the Commission's findings. Other progress reports will follow at the end of the summer of 1996 and in the 1997 *Annual Report to the President and the Congress.*

MAINTAINING READINESS AND ENHANCING JOINT MILITARY CAPABILITIES

The Commission report and the Department's subsequent actions highlight the critical importance of maintaining combat readiness and enhancing joint operations. Considerable progress has been made in this area since the Commission report was completed. Most notably, in recent weeks the Chairman of the Joint Chiefs of Staff finalized his operational vision for future joint operations, Joint Vision 2010. The Department has also acted on the Commission's recommendation to increase funding for the Joint Warfighting Center in Norfolk, Virginia, in order to enhance the Department's preparations for joint operations. Funds were added in FY 1995 and FY 1996 to upgrade the Joint Warfighting Center's modeling and simulation capabilities. The Department has also responded to the CORM's recommendations to enhance joint warfighting capability by increasing funding for the Joint Training, Analysis, and Simulation Center and providing funds for establishment of the Joint Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Battle Center. Furthermore, the Senior Advisory Group has also endorsed recent key Department readiness initiatives, including the preparation of the Joint Monthly Readiness Reviews by the Joint Staff and their presentation to the Senior Readiness Oversight Council, to ensure a high state of readiness for the forces assigned to the unified commands.

Even prior to the CORM's recommendation, the Department had been searching for the best way to finance contingency operations without impacting readiness. As a result, the FY 1997 budget will include funds for all ongoing operations that are expected to continue into FY 1997. The costs of FY 1996 contingency operations are being addressed in reprogramming initiatives and a supplemental budget request which, pending congressional approval, will allow the Department to finance these costs without diverting funds from readiness-related activities.

The Senior Advisory Group has reviewed several cross-Service interoperability initiatives cited by the Commission. Pending the results of the Navy/Marine Corps multipoint refueling requirements study, the Air Force has been directed to continue the current program to provide KC-10 and KC-135 tanker aircraft with multipoint capability. In addition, the Air Force has been asked to analyze and recommend a program to meet all future joint refueling requirements. Furthermore, in spring 1996, the Under Secretary of Defense for Acquisition and Technology will provide the Deputy Secretary of Defense with an assessment of U.S. refueling interoperability with allies and coalition partners. Later this year, the Department will consider upgrades to the EA-6B fleet, based on an ongoing Joint Staff-led electronic warfare mission area assessment.

In response to the Commission's recommendation, the Chairman of the Joint Chiefs of Staff reported on the adequacy of joint close air support (CAS) training, doctrine, and procedures. Based on inputs from the CINCs and the Service Chiefs, the Chairman identified several recent improvements in this area, noting in particular that the Services have increased their emphasis on CAS in training exercises. The Joint Staff also noted that a new joint publication has been released that provides commonly agreed tactics and procedures for close air support to be followed by all forces providing and helping to employ joint CAS. The Senior Advisory Group endorsed these recent initiatives and concluded that joint CAS training is adequate.

Finally, on December 28, 1995, the President approved several important changes to the Unified Command Plan as recommended by the Chairman of the Joint Chiefs of Staff. The Chairman agreed with the Commission's recommendation to reassign geographic areas of responsibility to allow for more effective operations. Specifically, effective immediately, U.S. Atlantic Command (USACOM) will make provisions to shift the waters adjoining Central and South America to U.S. Southern Command, and large portions of the Arabian Sea and Indian Ocean will shift from U.S. Pacific Command to U.S. Central

Command in order to enhance U.S. Central Command's ability to conduct theater-wide operations. In addition, the President has directed the Secretary of Defense to transfer to U.S. Southern Command, no earlier than June 1, 1997, the Caribbean, Gulf of Mexico, and an additional portion of the Atlantic. Consistent with the Commission's proposal to create a functional unified command focused on joint training and force integration, the Chairman supports continuing efforts to strengthen the recently reorganized USACOM which has been assigned these roles. However, he recommended deferring a decision on the assignment of all continental U.S.-based forces to USACOM, noting that the command has not yet sufficiently matured in its new joint training and force integrator roles to merit such a change.

PROVIDING NEEDED FORCE STRUCTURE

The Department strongly endorsed the Commission's recommendation to conduct an assessment of all deep attack systems to determine appropriate force size and mix. The Office of the Secretary of Defense and the Joint Staff, working with the Services and the unified commanders, have initiated a comprehensive two-part study in this area. The first part of this assessment will identify the appropriate weapons mix and command, control, communications, computers, and intelligence (C4I) architecture to support timely, effective deep attacks, as well as procedures for integrating the employment of many deep attack systems. The second part of this assessment will investigate appropriate force structure and delivery platform tradeoffs. The study team's work on part one is well underway, with initial findings to be presented to the Senior Advisory Group in summer 1996. Results of part two will be completed by early 1997.

Developing a comprehensive architecture guiding the use of C4I assets also is essential to realizing the full potential of America's increasingly precise forces in modern military operations. A special Integration Task Force (ITF) under the leadership of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence has been formed to develop this backbone architecture. The Senior Advisory Group endorsed the ITF approach in October 1995 and will review initial results in spring 1996.

As noted by the Commission, one of the most important ways to sustain the needed force structure is to size and shape the Total Force to meet the military requirements derived from the National Security Strategy and to ensure Reserve component forces are effectively integrated with the active forces across the spectrum of military operations. A special Department task force is reviewing the size, organization, and responsibilities of the Reserve components. It also has been asked to identify measures to ensure that the Reserve components can perform to the required standards. The Army, the Joint Staff, and OSD will each contribute to this review by providing the results of their assessments of different aspects of the overall issue. These inputs will be consolidated and reviewed by the Senior Advisory Group by spring 1996. In addition, the Secretary has asked the Chairman to report on integration of Reserve component forces into the CINCs' operational plans.

Finally, DoD has already shown strong support for the Commission's recommendation to downsize and improve the operation of the operational support airlift (OSA) fleet. The Chairman of the Joint Chiefs of Staff directed a study of OSA wartime requirements. This study, completed in October 1995, determined that the OSA wartime requirement was 391 aircraft. This validated requirement has allowed the Department to reduce the OSA fleet by 118 aircraft. With the help of the new Joint Air Logistics Information System (JALIS) that is providing increased visibility into the day-to-day use of the OSA fleet, the Commander in Chief of U.S. Transportation Command is examining fleet management issues. Assisted by this study, the Chairman will make his recommendations in this area to the SAG early in 1996.

ENSURING FORCE MODERNIZATION AND EFFICIENT SUPPORT STRUCTURES

The Commission's recommendations to outsource to commercial firms many support activities -- education and training, family housing, finance and accounting, data center operations, base infrastructure operations, some elements of medical care, and depot maintenance, as well as direct support of new weapon systems -- are arguably some of the most far-reaching aspects of the Commission's report. A Department-wide Integrated Process Team (IPT), chaired by the Deputy Secretary of Defense and under the day-to-day direction of the Assistant Secretary of Defense for Economic Security, has been created to implement these proposals. The IPT is seeking to identify opportunities, eliminate obstacles, and develop and implement strategies for outsourcing government functions without adversely impacting the Department's mission. It has already selected near-term targets for outsourcing and has developed a legislative package to support this effort. Throughout 1996, the Department will move aggressively to increase its outsourcing efforts.

The Commission's proposal to streamline central logistics support is closely tied to DoD's outsourcing initiatives. The Department fully endorses efforts to streamline logistics support within existing organizational arrangements. Most of these initiatives will be implemented in concert with the outsourcing efforts.

The Under Secretary of Defense for Acquisition and Technology recently completed an assessment of the Commission's recommendation to reorganize, collocate, and consolidate aviation acquisition organizations. The Department believes it is important to sustain the Base Realignment and Closure Commission's decisions regarding the relocation of individual Service aviation acquisition activities. However, the Department will pursue cross-Service consolidation of similar program offices, as implemented in the Joint Advanced Strike Technology program office, where appropriate. To this end, the Under Secretary of Defense for Acquisition and Technology will change DoD Directive 5000.1 and issue a policy memorandum to all DoD components and agencies making consolidation and collocation of future joint and closely related project offices a matter of DoD policy.

The Department reviewed the merits of consolidating the Defense Contract Audit Agency and Defense Contract Management Command. The results indicated that these two organizations would benefit more from streamlining initiatives that result from business process reengineering rather than consolidation. The Inspector General, however, will continue to investigate further streamlining and consolidation opportunities in this area.

Finally, since the Department already permits and endorses the use of modern commercial activity-based cost accounting systems by defense contractors, the Senior Advisory Group concluded it was unnecessary to mandate its use on an across-the-board basis.

IMPROVING DOD DECISION MAKING PROCESSES

The Commission called for improvements in a number of DoD decision making activities. An OSD/Joint Staff review team, using a framework derived from the CORM report, has developed proposals to improve the effectiveness of the Department's decision making processes. Proposals accepted by the Department include a commitment to institute a Quadrennial Strategy Review modeled after the Bottom-Up Review, targeted for 1997, and initiating a front-end assessment process addressing key planning, programming, and acquisition issues. The first front-end assessments were begun in the fall of 1995. The Department will also seek to harness more effectively the contributions of the Chairman's Joint Requirements Oversight Council/ Joint Warfighting Capabilities Assessment process, which has focused on the development of a system of systems linking intelligence, reconnaissance, and surveillance

capabilities with advanced battle management systems to guide the precise application of increasingly lethal weapons.

The Commission also stressed the idea of creating better organizational incentives to reduce costs within the Department. The Under Secretary of Defense for Acquisition and Technology and the Under Secretary of Defense (Comptroller), working with the military departments, have examined new approaches to creating incentives for achieving greater savings and efficiencies for all components within the resource allocation process and for program managers within the acquisition process -- a macro and micro approach. The goal of these approaches is to seek opportunities to reduce costs because all participants will have the opportunity to share in the associated budget savings.

Finally, Secretary Perry has received advice from the Service Secretaries in response to the CORM's recommendation to streamline the military departments and reduce political appointees within the Secretariat staffs. This advice was presented to the Senior Advisory Group for consideration, and the Deputy Secretary has issued additional guidance to the military departments to act on these important recommendations. At a minimum, the Deputy Secretary has asked the military departments to provide recommendations on the possible consolidation or streamlining of personnel, environmental, and legal functions. The Department is also continuing to explore other ways to improve overall DoD management, including establishment of a Capstone course to orient political appointees to the Department and creation of boards of directors to improve the management of defense agencies.

The Department is confident that, with the support of Congress where needed, these actions as well as the implementation of additional CORM proposals will improve DoD's abilities to maintain readiness, enhance joint military capabilities, sustain needed force structure, and ensure U.S. forces are the most modern in the world. A concerted effort to incorporate the Commission's recommendations into mainstream DoD activities will remain one of the Department's major goals for the coming year.

Chapter 7

COUNTERPROLIFERATION AND TREATY ACTIVITIES

INTRODUCTION

In December 1993, pursuant to Presidential Directive, the Secretary of Defense launched the Department's Counterproliferation Initiative. This initiative was undertaken in light of the growing threats to U.S. security and national interests posed by the proliferation of nuclear, biological, and chemical (NBC) weapons and their means of delivery. In many of the world's regions where the United States is likely to deploy forces -- Northeast Asia, the Persian Gulf, and the Middle East -- potential adversaries are pursuing the development or acquisition of NBC weapons. The American experience in the Gulf War made manifest the implications of NBC proliferation for defense planning. For DoD to do its job in the post-Cold War era, it must take seriously the potential NBC dimension of future conflicts. U.S. forces must be properly trained and equipped for all potential missions, including those in which opponents might threaten or use NBC weapons. The Defense Counterproliferation Initiative is designed to meet these challenges.

The primary goal of U.S. policy is to prevent NBC proliferation from occurring in the first place. The Department's activities contribute in many ways to achieving this goal. Military preparations for operations in an NBC environment make clear that threats or use of NBC weapons will not deter the United States from applying its military power in important regions. Effective capabilities to counter proliferation devalue the potential political and military benefits of NBC weapons for a would-be proliferant. In addition, capabilities developed for the battlefield to deal with NBC proliferation -- especially intelligence, surveillance, reconnaissance means -- can be brought to bear in support of international regimes, export controls, and other international monitoring efforts to prevent the spread of NBC weapons and related technologies.

IMPLEMENTING THE COUNTERPROLIFERATION INITIATIVE

Over the past year, the Department achieved significant progress toward fully integrating counterproliferation issues into its mission, including military planning, acquisition, budgeting, intelligence, international cooperation, and support to arms and export control regimes. Activities have built upon the formal policy guidance issued by the Secretary of Defense in May 1994 and the follow-on guidance contained in internal planning and programming documents. These documents have been revised to reflect the Department's role in the entire spectrum of U.S. government activities related to NBC proliferation -- from supporting diplomatic efforts to prevent or contain proliferation to protecting the United States and its friends and allies, and their military forces, from NBC attacks should they occur.

The Department's current focus on the integration and implementation of DoD counterproliferation policy is a sign of the maturity of the initiative. Similarly, the fact that DoD is now grappling with specific military planning issues demonstrates that the Department has moved well beyond questions of broad policy to determining the most effective measures to achieve its objectives. Maintaining the current momentum and direction of the counterproliferation initiative thus becomes a top priority.

Assigning Responsibilities for Counterproliferation Missions

One of the most important steps taken last year toward fully integrating counterproliferation into the functions of the Department was the completion of the Chairman of the Joint Chiefs of Staff (CJCS) Counterproliferation Missions and Functions Study, which gave the geographic commanders in chiefs (CINCs) principal responsibility for the counterproliferation mission. The Unified Command Plan has been revised to reflect this new role for the geographic CINCs and directs that operational planning address the military challenges posed by NBC proliferation. In mid-1996, the the Roles and Missions Senior Advisory Group will review, among other items, the Joint Staff's provisions to ensure that counterproliferation planning is addressed in the CINCs' operational plans.

Developing Integrated Force Requirements for Counterproliferation

The Department has also worked to ensure that the views of the regional commanders are fully factored into assessments of what capabilities are needed to support counterproliferation. Making use of the Joint Warfighting Capabilities Assessment (JWCA) process, which was established by the Vice Chairman of the Joint Chiefs of Staff to prioritize CINC requirements in specific functional/mission areas, the Department created a Deterrence/Counterproliferation JWCA team to identify CINC counterproliferation priorities. This JWCA team developed a list of 14 priorities:

- Detect and characterize biological weapons (BW)/ chemical weapons (CW) agents.
- Intercept cruise missiles.
- Defeat underground targets.
- Characterize and identify underground targets.
- Collect and analyze intelligence.
- Passive defense enabling operations.
- Support for operations in NBC environment.
- Production of BW vaccine.
- Plan and target above-ground infrastructure.
- Agent defeat.
- Detect and track shipments.
- Prompt mobile target kill.
- Support for special operations forces.
- Locate, detect, and disarm weapons of mass destruction (WMD) in the continental United States and overseas.

These results have provided an important basis for this year's budget request and, in particular, the Counterproliferation Support Program.

The Department's effort to counter proliferation threats is not limited, however, to identifying needed military hardware. An equally important part of the job is to adapt joint doctrine, planning, training, and exercise policies in light of the operational implications of the threat or use of NBC weapons. The regional commands are now working with Joint Staff and civilian counterparts to assess more fully how regional proliferation risks may affect doctrine and military operations in a theater. A more thorough understanding of how accomplishing routine military tasks may be affected by the presence of NBC weapons and associated delivery vehicles will, in turn, help DoD better define hardware requirements and the proper emphasis to be placed on various capabilities, including theater missile defenses (TMD), passive defenses, counterforce, and command, control, communications, and intelligence (C3I).

The Department has also made extensive use of wargames and related activities in 1995 to build a common understanding among the military community about warfighting issues associated with NBC proliferation. Hundreds of U.S. (and some allied) civilian and military personnel participated in Global 95, a wargame sponsored by the U.S. Naval War College that featured prominently the military issues arising from chemical and biological weapons use in a major regional conflict. Nimble Dancer, a CJCS-sponsored wargame, addressed similar questions. The Center for Counterproliferation Research at the National Defense University is also examining how doctrine and military operations might be adapted to address these challenges.

Reviewing Technologies to Respond to Proliferation Risks

The National Defense Authorization Act for FY 1995 established the Counterproliferation Program Review Committee (CPRC) to identify and review existing and proposed technologies for nonproliferation and counterproliferation. The CPRC, based on its mandate, focuses on programs underway or proposed by DoD, the Department of Energy (DoE), and the Intelligence Community. The CPRC establishes priorities and makes recommendations for programs designed to address risks posed by NBC proliferation. Part of the CPRC progress is the preparation of a comprehensive annual report which details the ongoing counterproliferation efforts across the Services and agencies. The May 1995 CPRC Report represents the most complete and recent accounting of counterproliferation and related activities within DoD, DoE, and the Intelligence Community.

Establishing Core DoD Programs -- The Counterproliferation (CP) Support Program

The Department has a large number and variety of programs currently planned that are either directly part of counterproliferation or are strongly related. The CP Support Program is a significant part of DoD's overall program of acquisition and research and development to counter the spread of NBC weapons and their delivery means. The CP Support Program has several important mandates, including to:

- Address major shortfalls in deployed capabilities.
- Leverage existing capabilities by accelerating on-going programs.
- Enhance the development of high-payoff technologies.

While the program is only a year old, early successes have been achieved. The CP Support Program's funding has allowed for the deployment of much needed capabilities to Service/CINC users and accelerating the development of key technologies that address shortfalls.

Highlights of the CP Support Program

The various technology and acquisition projects supported by the CP Support Program are divided into five general mission areas. The following section highlights present and future efforts in each of these areas, drawing specific attention to capabilities already deployed or accelerated.

PREVENTION

The focus in this area is on developing intelligence-gathering systems for the military to support the U.S. national security goal of preventing NBC proliferation in the first place. For example, DoD has deployed the specific emitter identifier (SEI), a capability that enables the identification and tracking of ships at sea that may be carrying NBC-related cargoes. The first SEI hardware was delivered to the Navy for use on patrol aircraft in the Middle East six months ahead of schedule.

PASSIVE DEFENSE

Current CP Support Program funding supports Defense Advanced Research Projects Agency, Army, Navy, and Marine Corps efforts that include the development of long- and short-range standoff biological detectors, point bio-detectors, a Surface Acoustic Wave chemical detector, and individual and collective protection equipment. Important programs that have been significantly accelerated by the CP Support Program include:

- Long-Range Biological Stand-Off Detector System (LR-BSDS). LR-BSDS is a helicopter-based detector that can detect aerosol clouds to provide long-range warning of the use of chemical and biological weapons. CP Support Program funding has accelerated the full fielding of the LR-BSDS by six years.
- Joint Service Lightweight Suit Technology (JSLIST). The JSLIST program is developing and fielding improved chemical protection suits that represent a substantial improvement over the existing generation of equipment. The program has been accelerated by two years and is currently in warm climate operational testing.

Potential future passive defense enhancement includes remote detection of chemical aerosols through multi/ hyper-spectral sensors and exploration of innovative bio-detection technologies.

ACTIVE DEFENSE

Theater missile defense is an essential element of DoD's approach to countering risks posed by NBC weapons delivered by cruise and ballistic missiles. The U.S. theater missile defense program is managed and funded by the Ballistic Missile Defense Organization (BMDO). From a counterproliferation perspective, boost phase defense is critical to defending against NBC-armed ballistic missiles. As described in Part IV, the current program is focused on defense against ballistic missiles. The program calls for near-term improvements to existing systems, development of a new core set of TMD capabilities, and exploration of Advanced Concept Technology Demonstrations (ACTD) and other risk reduction activities to complement the core programs.

COUNTERFORCE

The counterforce effort consists of a cluster of programs to identify, characterize, and neutralize above-ground hardened or underground NBC-related facilities such as factories, laboratories, and storage sites. In addition, the ability to predict accurately and mitigate the collateral effects of U.S. strikes on NBC facilities forms a core of DoD's counterforce capability. Collateral effects prediction software and hardware are being developed by DNA and the first set of predictive tools has been delivered to the U.S. European Command. An important area of work focuses on the Counterproliferation ACTD. The ACTD will allow the operational community to evaluate emerging capabilities to defeat or eliminate an opponent's NBC weapons, while minimizing collateral damage in doing so. This project demonstrates the Department's efforts to bring together the acquisition and operational communities, with the theater commander, to develop jointly a strategy and concept of operations for addressing the challenges posed by NBC proliferation. In FY 1997, the CP Support Program intends to expand counterforce efforts to include detection and defeat of critical mobile targets (such as Scud missile launchers) as well as the destruction of nuclear weapons infrastructure.

COVERT/TERRORIST NBC THREATS

Present CP Support Program efforts include the prepositioning of NBC-related explosive ordinance disposal (EOD) equipment for counterterrorist use, advanced technology to counter covert NBC threats, and supporting operations plans and training exercises related to NBC incidents. Especially significant progress has been made in the EOD area -- through the CP Support Program, nuclear EOD equipment has been deployed to several sites in the United States and overseas to heighten readiness and reduce response times in dealing with potential threats. The first additional set of nuclear EOD equipment has been shipped to the European theater for prepositioned forward storage.

Improving Intelligence Support for Counterproliferation

The U.S. Intelligence Community, with a leading role played by the Defense Intelligence Agency (DIA), is improving its ability to provide DoD leaders the detailed information necessary to support efforts to discourage NBC acquisition, to deter the threat or use of NBC weapons by a proliferant, and to protect against potential NBC attacks on the United States, U.S. forces, and U.S. friends or allies. A high priority is being placed on assessing the intentions, programs, operational practices, and supporting infrastructure of countries of concern such as Iran, Iraq, Libya, and North Korea, as well as countries who are also of concern as suppliers (like North Korea). This underwrites DoD prevention efforts and provides a basis for military force structure development. Greater attention is also being given to operational intelligence (such as the location and characterization of NBC facilities, target vulnerability, early warning tracking data) and its timely dissemination, both of which are critical for planning defenses and responses to NBC threats.

Cooperating with International Partners in Addressing Shared Risks

The Department is continuing to work with America's long-standing allies in Europe and in the Pacific region to develop common approaches on counterproliferation. Notably, the Department played the leading role in moving counterproliferation to the top of NATO's agenda.

The NATO Senior Defense Group on Proliferation (DGP), co-chaired by the United States and a European ally (currently the United Kingdom), was established in 1994 to determine the range of alliance and national capabilities needed in light of proliferation risks. In November 1995, the DGP presented its key findings to NATO defense and foreign ministers. It stressed the importance of developing a core, integrative set of capabilities (including doctrine and training) that provided a basis for continuing capability enhancements and force improvements as proliferation risks evolve. This core set of capabilities includes:

- Strategic and operational intelligence, including early warning data.
- Automated and deployable command, control, and communications.
- Continuous, wide-area ground surveillance.
- Standoff and point BW/CW detection, identification, and warning.
- Extended air defenses, including theater ballistic missile (TBM) defense for deployed forces.
- NBC individual protective equipment for ground forces.

In many of these areas, NATO already has, or is on the way to developing, the requisite capabilities. DGP findings are intended to give impetus and added rationale for fielding such capabilities, as well as to demonstrate how supplementing this nucleus of capabilities with other means -- including layered defenses against TBM attack, special munitions for NBC agent defeat and hardened NBC targets, computer modeling and simulation, and medical countermeasures -- would strengthen the alliance's

overall ability to discourage NBC proliferation, deter the threat of use of NBC weapons, and protect against NBC attacks.

In the Pacific region, U.S. friends and allies have also recognized the growing security risks posed by proliferation. DoD has collective defense arrangements with many in the region, and conducts combined operations with their militaries. Some Pacific partners have also participated in -- and will likely do so in the future -- international coalition operations in which the presence of NBC weapons has been a factor. For these reasons, DoD has been working with such key allies as Japan and Australia to forge common approaches to improving military capabilities and doctrine in the face of NBC risks.

These international activities demonstrate that the United States is not alone in its concerns for the defense dimension of proliferation. The Department remains committed to building international partnerships with allies and friends whose security and national interests are threatened by NBC proliferation.

STRENGTHENING INTERNATIONAL NONPROLIFERATION NORMS

Indefinitely Extending the Nuclear Non-Proliferation Treaty

The 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) established certain obligations for both nuclear weapons states and non-nuclear weapons states regarding the transfer, manufacture, or acquisition of nuclear weapons or other nuclear explosive devices. The Treaty mandated a review and extension conference, which was held in April-May 1995, at which time the parties agreed to extend the NPT indefinitely and unconditionally. As in previous preparatory meetings, DoD representatives played a strong role in the extension conference. The decision to extend the NPT indefinitely is accompanied by a commitment to NPT Principles and Objectives which includes a call for Treaty universality, transparency in export controls, and a strengthened NPT review process.

Negotiating a Comprehensive Test Ban Treaty

The President has directed the U.S. government seek to conclude negotiations in the Conference on Disarmament on a zero-yield Comprehensive Test Ban Treaty (CTBT) by April 1996, to report the treaty to the United Nations General Assembly in the summer, and to have the treaty ready for signature in fall 1996. A CTBT will strengthen the global norm against proliferation of nuclear weapons and constrain the development and validation of new nuclear weapons by proliferant states and the nuclear weapons states. The United States will continue to ensure the safety and reliability of its nuclear weapons stockpile. DoD is a key player in developing U.S. positions for these negotiations.

Ratifying the Chemical Weapons Convention

Opened for signature on January 13, 1995, the Chemical Weapons Convention (CWC) currently has 159 signatories and will enter into force 180 days following the deposit of the 65th ratification with the United Nations (47 had ratified as of March 6, 1996). The Administration has submitted the CWC to the Senate for ratification. Since February 1993, the CWC Preparatory Commission (PrepCom) has been meeting to complete the details necessary to have the Organization for the Prohibition of Chemical Weapons (OPCW) fully operational at entry into force. DoD continues to participate actively in the PrepCom, providing experts on key implementation matters 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 non-stockpile items (former production facilities, training weapons, and so forth) covered by the Convention.

Enhancing the Biological Weapons Convention

The President has directed that the United States 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 1972 Biological Weapons Convention (BWC). DoD participates in the U.S. delegation to the BWC Ad Hoc Group mandated by the September 1994 Special Conference and plays 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.

ENHANCING TECHNOLOGY SECURITY AND EXPORT CONTROLS

America's military technological advantage is a critical force multiplier that serves to deter aggression and, where deterrence fails, enables U.S. forces to fight and win with minimum casualties. The central purpose of DoD's technology security program is to preserve this important advantage by preventing the transfer of dangerous arms and dual-use technologies to countries that pose a threat to international security. Likewise, the program ensures that when such goods are transferred, it is done in a prudent and responsible manner that neither endangers national interests nor compromises U.S. military superiority.

Of necessity, DoD's technology security program is multifaceted, incorporating both arms as well as dual-use goods and technologies. Export controls -- both national as well as international -- play an important role in this process. While it remains U.S. policy to prohibit and curtail the proliferation of NBC technologies, the United States recognizes that the sale and export of conventional weapons and associated technologies is not inherently threatening or destabilizing. In fact, many such transfers support legitimate defense requirements of allies and friends, promote burdensharing, and increase interoperability with U.S. forces. Such exports also serve to maintain a strong and responsive U.S. defense industrial base.

A number of important enhancements to DoD's technology security program have taken place during the past year. The Administration has promulgated a comprehensive Conventional Arms Transfer policy. DoD played a central role in developing the Presidential Decision Directive, which establishes clear guidelines and specific factors to be considered before arms transfers are approved. DoD is equally involved in analyzing selected categories of dual-use technology, assessing the impact on national security should such technology be transferred, and developing appropriate policies to guide the U.S. export review process.

For example, the Department of Defense played a key role in establishing new U.S. export controls on high-performance computers. DoD conducted an assessment of national security applications for computers and examined trends in computer technology. These findings were used to design and focus controls on those computers that are controllable and can be used in important national security work. In the face of a rapid advance and diffusion of computer technology worldwide, the revised computer controls will achieve two objectives: first, they will continue to allow the United States to deny access, by destinations that pose national security and proliferation risks, to controllable computing power needed for critical military or proliferation applications; and second, they will ensure that the superiority of the U.S. computer industrial base is protected by controlling only the controllable, and by not creating market niches for less responsible suppliers by unnecessarily impeding U.S. exports.

The United States clearly recognizes that it is not the only supplier of arms and dual-use goods and technologies. Accordingly, considerable effort is made to harmonize U.S. export policies and practices with other suppliers in order to make export controls more effective and, where exports are appropriate, to ensure a level playing field for American industry. On December 19, 1995, the United States and 27 other governments agreed to the establishment of a new international regime to replace the Coordinating

Committee for Multilateral Export Controls (COCOM). The new regime is to be known as the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies. (Wassenaar is the town outside the Hague where agreement on the new regime was reached.) Participants have agreed to control globally all items set forth on a basic list of dual-use goods and technologies and on a munitions list. Although just an initial framework that will need to be elaborated and defined more fully, the Wassenaar Arrangement is expected to increase transparency and responsibility for the global market in conventional arms and dual-use goods and technologies. Other examples of multilateral collaboration include active support and participation in the Missile Technology Control Regime (MTCR), the Nuclear Suppliers' Group (NSG), and the Australia Group.

TREATY ACTIVITIES -- THREAT REDUCTION THROUGH ARMS CONTROL

The United States is party to a number of formal agreements with states of the former Soviet Union or the former Warsaw Pact relating to the control of weapons of mass destruction and other armaments. While these treaties have their origins in the Cold War, they remain important by providing legally binding mechanisms for reducing (and in some cases eliminating) categories of arms, as well as enhancing confidence and international stability. The Department of Defense is responsible for ensuring U.S. compliance with its international arms control obligations, and plays a key role in the development of U.S. policies regarding treaty negotiation, ratification, verification, and implementation. A unique DoD element, the On-Site Inspection Agency (OSIA), performs inspection, escort, and monitoring functions associated with verification of a wide range of arms control treaties and agreements.

START I

The first Strategic Arms Reduction Treaty (START I), signed in 1991, entered into force in December 1994. This landmark treaty, originally concluded between the United States and the Soviet Union, provided for the first actual reductions in the superpowers' deployed strategic offensive arms. Following the December 1991 breakup of the Soviet Union, the states of Russia, Belarus, Kazakstan, and Ukraine became parties with the United States to the START I Treaty through the Lisbon Protocol. In documents associated with the signing of the Lisbon Protocol in May 1992, Belarus, Kazakstan, and Ukraine agreed to eliminate all strategic offensive arms from their territories within the START seven-year reduction period and to accede to the Nuclear Non-Proliferation Treaty (NPT) as non-nuclear weapon states. On December 5, 1994, Ukraine formally acceded to the NPT, as Kazakstan and Belarus had previously done, and the five START I parties then exchanged instruments of ratification, bringing START I into force.

Under the terms of START I, the sides are to reduce by December 5, 2001, their deployed accountable strategic warheads by over 40 percent, and their accountable strategic delivery systems by about one-third, from 1990 levels. The sides began efforts to achieve these goals well ahead of entry into force of the Treaty, and continued their activities related to the elimination of ballistic missile launchers and heavy bombers throughout 1995. By the end of 1995, over 1,500 strategic warheads and 760 missile launchers and bombers had been removed from START accountability in Belarus, Kazakstan, Ukraine, and Russia. As a result of the eliminations, the former Soviet states are already well below the first intermediate ceiling on deployed missile launchers and bombers and their associated warheads, several years ahead of the required schedule. The United States, for its part, has removed warheads and missiles from all the missile launchers to be eliminated under START I and has retired and moved to a central elimination facility all heavy bombers earmarked for dismantlement under the Treaty. The United States has also eliminated 700 strategic missile launchers and heavy bombers or about 57 percent of the deployed delivery vehicles which will be reduced under START I, thus meeting the first START I intermediate ceiling on launchers and accountable warheads almost three years ahead of schedule, and the second intermediate limit on launchers and ballistic missile warhead almost five years early.

The entry into force of START I ushered in a verification regime of unprecedented complexity and intrusiveness. In addition to verification by national technical means, data notifications, missile flight test telemetry exchanges, and other cooperative measures, the Treaty provides for 12 types of on-site inspections and exhibitions, as well as continuous on-site monitoring activities at specified facilities. Beginning in March 1995, the Treaty parties began conducting on-site inspections at a large number of current and former strategic installations in the United States and former Soviet Union. By the end of 1995, the United States had hosted over 60 such on-site inspections at DoD facilities by START inspectors representing the former Soviet states. DoD representatives also played key roles on U.S. delegations during meetings of the START Joint Compliance and Inspection Commission (JCIC). The JCIC, convened periodically in Geneva, provides a forum for the five START parties to discuss issues relating to compliance with START obligations and agree on practical measures to improve the Treaty's viability and effectiveness.

START II

The START I Treaty set the stage for a subsequent agreement between Russia and the United States further reducing strategic offensive arms, known as START II. This Treaty, signed by President Bush and President Yeltsin in January 1993, provides for the elimination, by January 1, 2003, of the most destabilizing category of strategic weapons -- heavy and all other intercontinental ballistic missiles (ICBMs) equipped with multiple, independently-targeted reentry vehicles (MIRVs) -- and will result in the reduction of deployed strategic warheads to no more than 3,500 on each side, approximately one-third of pre-START levels. With the Senate's vote to ratify START II, the United States now hopes for early action by the Russian legislature to approve the treaty. DoD has worked closely with other agencies in encouraging members of the Russian State Duma and Federation Council to vote in favor of START II ratification. The Administration looks forward to exchanging instruments of ratification of START II as soon as possible, after which the parties will proceed to deactivate strategic systems to be reduced under the Treaty under the terms of a joint statement issued by President Clinton and President Yeltsin in September 1994. The Department of Defense will take a lead role in establishing the schedule and method used for implementing these strategic force deactivations after START II enters into force.

Intermediate- and Shorter-Range Nuclear Forces

The Treaty on Elimination of Intermediate-Range and Shorter-Range Missiles, commonly referred to as the INF Treaty, signed by the United States and the Soviet Union in 1987, entered into force in 1988. It required the elimination of ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers. All such declared missiles were eliminated by mid-1991. The INF Treaty is of unlimited duration, prohibiting production and possession of missiles subject to its terms. Its inspection regime, consisting of short-notice inspections at former INF facilities and continuous portal monitoring of certain missile production facilities, remains in force. DoD officials are key participants in these inspection and monitoring activities, and take part in the INF Special Verification Commission (SVC), at which the United States, Russia, Belarus, Kazakstan, and Ukraine meet to discuss and resolve Treaty implementation and compliance issues. During 1995, DoD representatives were heavily involved in negotiations with the Russian Federation to develop procedures for continuous monitoring of new ballistic missile production at the Votkinsk Machine Building Plant.

Anti-Ballistic Missile (ABM) Treaty

Successive administrations have supported the continued viability of the ABM Treaty as important to preserve and enhance U.S. national security. As a cornerstone of strategic stability, the Treaty has made an important contribution to the extraordinary progress in reducing strategic offensive arms. Although the

ABM Treaty does not address TMD systems per se, it does require that non-ABM components (which would include TMD) not be given capability to counter strategic ballistic missiles and not be tested in an ABM mode. The Administration believes that clarification of the distinction between ABM systems, which are limited by the ABM Treaty, and non-ABM systems, which are not so limited, is necessary. The Administration further believes that such a clarification should be pursued through negotiations with Russia and any other New Independent States that choose to be parties to the Treaty as successors to the USSR. 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 ABM Treaty as the United States pursues development and deployment of effective TMD systems for the protection of its forces overseas, allies, and friends.

ABM Treaty compliance is not imposing any constraints on the planned capabilities of the TMD systems the United States is pursuing. The Department has concluded -- and reported to Congress separately -- that the third upgrade to Patriot Advanced Capability (PAC-3), the Navy Lower Tier, the Navy Upper Tier, and the Theater High Altitude Area Defense (THAAD) demonstration/validation flight test program as currently designed and planned, will be compliant with the ABM Treaty.

Conventional Armed Forces in Europe Treaty

The Treaty on Conventional Armed Forces in Europe (CFE), signed in November 1990, entered into force in November 1992. The Department of Defense continues to play a very active role in the verification and compliance activities associated with the CFE Treaty. 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. The Treaty reached a milestone date in November 1995, when all 30 parties were required to achieve their mandated levels of equipment holdings. Toward this goal, over 50,000 pieces of military hardware were destroyed. In 1995, the On-Site Inspection Agency participated in over 60 inspections under the Treaty in states of the former Warsaw Pact and escorted foreign teams during eight inspections of U.S. forces in Europe. The Treaty is now in the 120-day residual level validation period of on-site inspections to confirm notified equipment holdings.

NATO allies have also been working to address concerns expressed by Russia and some other Treaty parties regarding the limits on equipment located in the flank area of the CFE zone of application. The United States and NATO have conducted intensive discussions with Russia and other parties about the importance of resolving their concerns in a manner that preserves the CFE Treaty and results in no diminution of the security of any Party to the CFE Treaty. On November 17, 1995, in Vienna, all 30 parties to the Treaty reached agreement on the makeup of a flanks solution, including a map realignment, an equipment withdrawal schedule, and constraints on forces in the realigned areas. Discussions to conclude the details of an agreement are continuing.

Open Skies Treaty

DoD is continuing preparations for implementation of the Open Skies Treaty, signed in March 1992. The Treaty will permit participating states to overfly other parties and collect photographic and other specified data, thereby strengthening stability and cooperative security though increased openness and transparency. The U.S. Open Skies aircraft, operated by the USAF and staffed by OSIA, has participated in 12 trial flights in 1995, including four with foreign participants. The treaty is awaiting ratification by Russia, Ukraine, and Belarus to enter into force.

The On-Site Inspection Agency

The On-Site Inspection Agency is a joint-Service defense agency tasked with ensuring U.S. readiness for and implementation of inspection, escort, and monitoring activities related to verification provisions of several conventional and strategic arms control treaties and agreements. Tracing its inception to the Intermediate-Range Nuclear Forces (INF) Treaty, OSIA began operations in January 1988 in response to a Presidential directive. OSIA drew on various U.S. government agencies for expertise to provide inspection, escort, and monitoring teams comprised of team chiefs, weapons specialists, linguists, technical experts, and as needed, policy experts to implement the INF Treaty's inspection regime.

In 1990, the OSIA charter was expanded twice. The first change included responsibility for operational planning and preparation for implementation of on-site inspection provisions under the CFE Treaty, START, the Chemical Weapons Agreements, and the Nuclear Testing Treaties -- the Threshold Test Ban and Peaceful Nuclear Explosions Treaties. Later that year, President Bush assigned overall management and support of in-country nuclear test monitoring to OSIA. Agency experts continue to prepare for the inspection provisions of the START II Treaty and the Open Skies Treaty, as well as conduct the audit and examination provisions of the implementing agreements under the Nunn-Lugar Cooperative Threat Reduction (CTR) Program. The OSIA teams record the quantities and use of equipment provided to the former Soviet Union states to support nuclear arms dismantlement efforts. OSIA also provides technical insight, based on its extensive operational expertise and experience, in the appropriate fora during treaty negotiations.

During the 120-day baseline inspection period for START I that began last March, OSIA teams conducted 74 missions at 72 sites in the four former republics of the Soviet Union -- Russia, Ukraine, Belarus, and Kazakstan -- where strategic offensive arms are located. The European Operations Command, an OSIA component at Rhein-Main Air Base in Germany, conducts inspections and escort and liaison missions under the CFE Treaty; inspections and escort missions under Confidence- and Security-Building Measures such as the Vienna Document 1994; and escort missions for the INF Treaty.

OSIA also serves as Executive Agent for DoD support to the United Nations Special Commission (UNSCOM) on Iraq, fulfilling Security Council Resolutions 687 and 715. In this capacity, the Agency tasks, as needed, departmental components for procurement or provision of DoD equipment, services, manpower, and facilities to further UNSCOM goals.

The Defense Treaty Inspection Readiness Program (DTIRP), a security and countermeasures program under the auspices of the Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence, is run on a day-to-day basis by the OSIA Security Office. As Executive Agent for DTIRP, OSIA works closely with its peers in U.S. industrial facilities and at military installations targeted for on-site inspections. Agency technicians, trained in arms control security awareness techniques, develop site-specific procedures that help ensure foreign inspection team access does not result in the loss of proprietary of sensitive information.

OSIA personnel plan for implementation and will escort inspection teams to DoD CW storage, former production, research and development, and demilitarization facilities in accordance with the provisions of both the CWC and Bilateral Destruction Agreement. Agency officials assist other DoD activities with CW implementation readiness planning, to include conducting mock inspections at DoD facilities. OSIA also provides escort and interpreter support to the DoD program aimed at establishing a viable Russian CW destruction program under the CTR Program.

Four Arms Control Implementation Units (ACIUs), established by OSIA, serve as forward posts for arms control and defense-related functions and provide vital liaison functions with U.S. embassies in Moscow, Kiev, Minsk, and Almaty. These units also provide support for the CTR Program.

CONCLUSION

By means of the Counterproliferation Initiative and key involvement with implementing and verifying arms control treaties and agreements, DoD is focused squarely on the challenge of reducing the dangers from weapons of mass destruction and improving international stability and security, while maintaining capabilities to respond to any threat. The Department's aggressive leadership in counterproliferation and threat reduction, manifest through numerous concrete programs and activities, has yielded substantial results, and will continue to be vital in achieving national objectives in this area.

Chapter 8

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, Kazakstan, 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 an 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 WMD proliferation.

A DYNAMIC PROGRAM

Legislation in each of FYs 1992 and 1993 provided the Secretary of Defense with $400 million in transfer authority from DoD funds for the CTR program. Congressional actions subsequently reduced the authority by $330 million. In both FY 1994 and FY 1995, DoD requested and was granted $400 million in direct appropriations for a total of $1.27 billion in obligation authority. In FY 1995, an additional $18 million of FY 1992 and FY 1993 funding authority expired and $20 million of the FY 1995 authority was withdrawn. Actual authority, considering the withdrawn or expired funding, is $1.236 billion in CTR assistance in the form of signed agreements and other support to Russia, Ukraine, Belarus, and Kazakstan. By the end of FY 1994, DoD obligated $434 million and by the end of FY 1995, over $866 million.

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 identity specific needs, and oversees the contracts. American firms are used whenever possible, which is in most cases. Having the CTR program provide goods and services -- rather than cash -- allows the United States to confirm that this assistance is being used for denuclearization prevention efforts.

The CTR experiences in Ukraine illustrates both the challenges of arranging for assistance and the benefits of cooperation. Notwithstanding Ukraine's pledge in the Lisbon Protocol of 1992 to become a non-nuclear weapons state, the actual process of withdrawing warheads to Russia was not agreed upon until the United States concluded the Trilateral Agreement 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 discussions began.

CTR PROGRAM OBJECTIVES

The objectives of the CTR program were established by Congress and provide guidance for U.S. implementation of the program. These are:

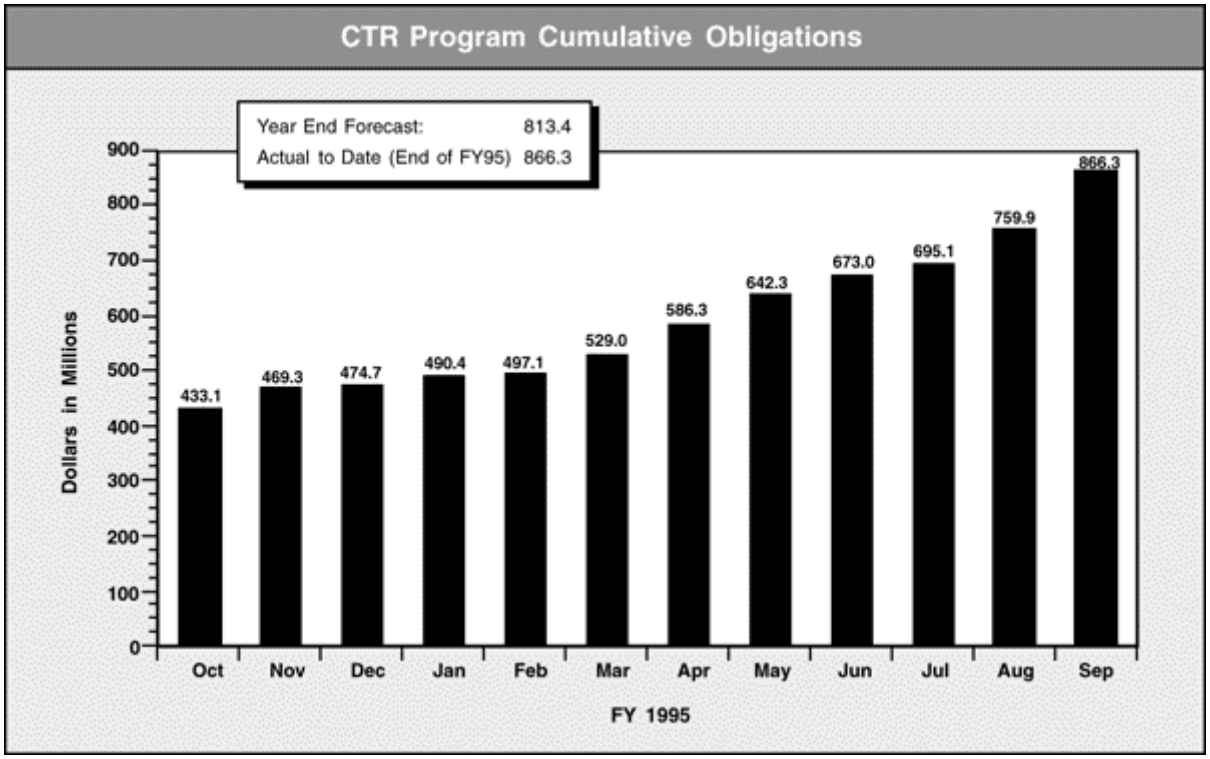
- Assist the former Soviet republics to destroy nuclear and other weapons of mass destruction.
- Transport, store, disable, and safeguard weapons in connection with their destruction.
- Establish verifiable safeguards against the proliferation of such weapons.
- Prevent diversion of weapons related scientific expertise.
- Facilitate demilitarization of defense industries and conversion of military capabilities and technologies to civilian activities.
- 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, their launchers, and their infrastructure in the four eligible NIS: Belarus, Kazakstan, Russian Federation, and Ukraine. Destruction and dismantlement activities provide actual equipment, training, and services required to implement dismantlement decisions as leverage to encourage these countries to dismantle.

Second, through chain of custody and nonproliferation activities, the CTR program decreases the proliferation 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.

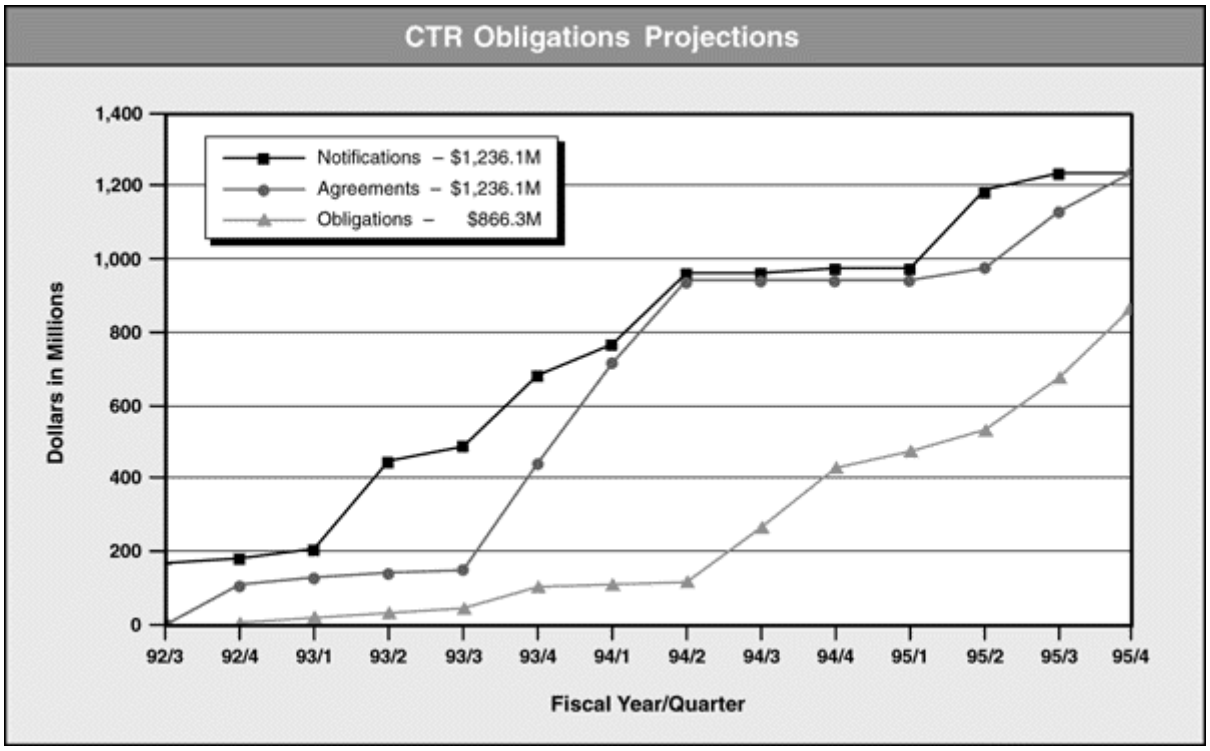
Third, CTR supports demilitarization efforts which decrease the long-term threat by reducing the capacity and economic pressures in the NIS to continue to produce weapons of mass destruction. The CTR defense conversion industrial partnership projects are an effort to convert former WMD factories to civilian production, thereby reducing possible future nuclear threats. In addition, the CTR-supported International Science and Technology Centers (ISTCs) in Russia serve as a clearinghouse for projects to engage NIS weapons scientists and engineers in peaceful civilian work. The transformations created through the defense conversion industrial partnership arrangements and the ISTCs 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 and by providing job alternatives for weapons scientists who might otherwise be tempted to sell their expertise abroad.



Lastly, the CTR program supports other programs such as the expansion of defense and military contacts with the NIS. When the Soviet Union dissolved, its republics were left with structures, forces, and equipment 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 attempts to instill transparency of budgets and programs. These countries will remain important players in world events, and the United States defense establishment, as well as the American people as a whole, benefit 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 interests coincide, rather than conflict, with those of the NIS. Although differences will still occur, development of 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 program objectives, assistance is provided to Belarus, Kazakstan, Russia, and Ukraine pursuant to umbrella agreements that establish an overall legal framework for CTR assistance activities. Each of these four umbrella agreements provides a system of rights, exemptions, and protections for United States assistance personnel and for CTR activities, and designates executive agents to implement CTR assistance programs for each government. The designated U.S. executive agent is the Department of Defense. Each of the four umbrella agreements authorizes the conclusion, by the executive agents, of implementing agreements that are subject to and governed by, the terms of the umbrella agreement and provide more detailed terms for specific assistance projects.



As of October 1995, 34 such implementing agreements have been concluded by the Department of Defense: 12 with ministries of the Russian Federation; eight with ministries of the Republic of Kazakstan; seven with ministries of Ukraine; and seven with ministries of Belarus. In addition, four separate memoranda of understanding between the Department of Defense and counterpart defense ministries address defense and military-to-military relations.

The CTR program has grown impressively, particularly over the past two years, with the baseline obligation rate increasing over four-fold from about $105 million at the start of FY 1994 to about $434 million at the end of FY 1994 and doubling in FY 1995. To date, DoD has notified Congress of proposed obligations totaling $1.236 billion from funds authorized for FY 1992 to FY 1995 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 $760 million, of which $300 million has been disbursed. The chart above illustrates CTR obligations through the end of FY 1995.

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 directed American contractors be used for CTR support to the extent feasible and agreements with recipient governments make U.S. contracting laws applicable to CTR activities. Accordingly, DoD contracting for CTR goods and services is based on Federal Acquisition Regulations. 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 and is closely coordinating its assistance efforts with its allies through NATO and G-7 forums. This eliminates needless duplication and meets the needs of Russia, Ukraine, Kazakstan, and Belarus.

Furthermore, in order to ensure assistance provided under CTR is used as intended, the CTR agreements include provisions for the United States to conduct audits and examinations (A&E) of the assistance

provided. The United States has conducted nine A&Es in the NIS (Belarus (4), Russia (2), Ukraine (2), Kazakstan (1)); one A&E is projected for every month through FY 1996 (Belarus (1), Russia (6), Ukraine (4), Kazakstan (1)). It is important to note that CTR A&Es are not arms control inspections, but formal checks to ensure goods and services provided through the Nunn-Lugar program are used for the intended, agreed-upon purpose.

REDUCING THE THREAT

CTR activities contributed significantly to threat reduction over the past four years. United States offers of assistance under the program were instrumental in convincing Belarus, Kazakstan, Russia, and Ukraine they could shoulder the economic, political, and technical burdens of weapons dismantlement and demilitarization. Since the dissolution of the Soviet Union, the CTR program has assisted the four NIS possessing portions of the Soviet nuclear arsenal with the elimination (or, in the case of Russia, reduction) of WMD; proliferation prevention efforts; and the dismantlement and transformation of WMD-associated infrastructure.

Through the provision of equipment and technical expertise, the CTR Program supports Belarus, Ukraine, and Kazakstan in implementing their status as non-nuclear weapons states (in accordance with START I and the Nuclear Non-Proliferation Treaty (NPT)) and facilitated Kazakstan's becoming free of all nuclear weapons in the spring of 1995. Since the inception of the CTR program, the following positive developments in the NIS have occurred:

- Withdrawal of over 2,500 strategic warheads to Russia from Kazakstan, Belarus, and Ukraine. Most of these warheads are expected to be dismantled in Russia.
- Ukrainian decision to denuclearize and accede to the NPT as a non-nuclear weapons state.
- Early deactivation of all SS-24 intercontinental ballistic missiles (ICBMs) and over half of the SS-19 ICBMs in Ukraine.
- Purchase and transfer of 600 kilograms of weapon-usable uranium from Kazakstan to the United States.
- Commenced removal of SS-18 missiles from Kazakstan.
- Safe and secure withdrawal of 63 of 81 SS-25 mobile ICBMs and launchers from Belarus to Russia.
- START Treaty communication links in place.

Future CTR assistance is planned to help Russia meet its START II obligations in weapons reductions. CTR is assisting Russia in meeting and accelerating its START Treaty obligations and in preparing to comply with the Chemical Weapons Convention, once the latter enters into force. CTR assistance has expedited Russia's compliance with START levels by contributing to the following developments:

- Removal of over 1,200 strategic warheads from deployed systems.
- Elimination of 230 submarine-launched ballistic missiles launchers.
- Elimination of 445 ICBM silos.
- Elimination of approximately 35 strategic bombers.
- Elimination of 1,500 missiles.

CTR assistance has helped with the establishment of the Chemical Weapons Destruction Support Office in Moscow. CTR assistance procured a U.S. prime contractor to plan for chemical weapons (CW) destruction. In addition, CTR assistance sponsored a joint evaluation of Russian CW neutralization technology.

CTR assistance contributed to the enhancement of safety, security, and control of fissile material and nuclear weapons in Russia:

- Installed security and safety enhancements to Russian nuclear weapons transport railcars.
- Supported preliminary design of fissile material storage facility.
- Provided storage facility construction equipment and containers for storing and transporting fissile materials from dismantled nuclear weapons.
- Delivered armored blankets for enhanced security of nuclear weapons during transport.
- Provided nuclear emergency response equipment and training.

U.S. assistance in this area helps give Russian authorities the confidence to proceed with warhead consolidation and eventual dismantlement. Thus, CTR not only helps to alleviate physical bottlenecks, but also provides an incentive towards improvements in security.

CTR contributed to additional proliferation prevention efforts. To date, over 11,000 former Soviet weapon scientists and engineers once engaged in WMD research are now or soon will be employed on peaceful, civilian research projects supported by the International Science and Technology Center in Moscow, thus reducing the threat of the transfer of WMD expertise to potential proliferant states. The Project Sapphire mission in November 1994 to remove 600 kilograms of highly enriched uranium (HEU) to the United States from poorly secured storage in Kazakstan was partially funded through CTR.

The CTR Program is a vital political instrument and a venue for discussion. The cooperative nature of CTR enhances defense and military-to-military contacts and promotes the evolution of the NIS into free-market democracies. The January 1994 Trilateral Accord among Ukraine, Russia, and the United States and the accession of Ukraine to the Nuclear Non-Proliferation Treaty as a non-nuclear weapons state are landmark achievements made possible, in part, by the successes and prospects of CTR assistance.

Conditions of instability, uncertainty, and strife still exist within the NIS. The CTR Program is responding to these challenges with a program plan designed to continue and accelerate WMD threat reduction through FY 2001. CTR materially and observably reduced threats to the United States and provides the means for continuing to do so in the future.

AN INTEGRATED APPROACH

These successes come not as the result of isolated donations of equipment, but are a product of the close interaction 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 the nature and impact of this multipronged approach. The assistance projects noted previously are only part of the story for Ukraine. The complete picture 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 chose. 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. The Trilateral Agreement had four related components: transfer of nuclear warheads to Russia for dismantlement, compensation for fissile materials, security assurances to Ukraine, and CTR assistance. This landmark agreement was cemented,

as already noted, by U.S. pledges to provide assistance to Ukraine in its dismantlement efforts under the CTR program.

In an effort to speed the specific action that eliminated much of the direct threat in Ukraine to the United States -- removing warheads from missiles -- the United States offered to accelerate delivery of materials useful for early deactivation. The fruits of this effort were dramatically visible when the Secretary of Defense visited a missile facility at Pervomaysk, Ukraine, in March 1994. There he inspected an ICBM silo from which 10 warheads had been permanently removed. This provided a vivid example of the effectiveness of CTR in helping to neutralize a nuclear system which until very recently had posed a threat to the United States.

These very tangible initial successes provide the foundation upon which further CTR assistance for the dismantlement and destruction of SS-19s is built. CTR assistance was directed to remove potential choke points in the long and difficult process of dismantling the SS-19 ICBM silos located on Ukrainian territory. Some examples of the program's successes in this regard include:

- Construction of the SS-19 ICBM storage yard.
- Construction of the SS-19 dismantlement facility.
- Procurement of storage tanks for liquid rocket fuel.
- Purchase of equipment needed for silo elimination.

The CTR program also sponsored a continuous series of defense and military contacts which went far to assure Ukraine that the United States (and the West) had an interest in Ukraine's stability and success beyond eliminating nuclear weapons from its soil. The United States has provided expertise and support in helping Ukraine develop a national armed force that reflects its sovereign needs, through visits to U.S. training centers and other activities that have made tangible America's commitment to Ukrainian security.

Individuals whose careers have been spent in the nuclear weapons arena must understand 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 and Ukraine mutually desire the elimination of the nuclear weapons, the economic and social consequences of dismantling the entire complex must be addressed. Two aspects of the CTR program provide some limited assistance in this regard, at the cost of only 14 percent of the entire Ukrainian 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 Ukraine 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 to provide the required housing. The CTR program is helping to solve this problem as part of a defense conversion program under which a former shipbuilding plant and missile silo factory will produce, with American partners, housing for these demobilized missile officers, and later for commercial sale. In January 1996, the United States transferred to the Ukrainian government an initial set of housing units completed with CTR funds for decommissioned Strategic Rocket Force officers. 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 would detract seriously from other aspects and reduce their overall effectiveness.

FUTURE PRIORITIES

In spite of the progress made by the CTR program in all areas of threat reduction, a great deal of work still needs to be done. The program will continue to provide Russia, Belarus, Kazakstan, and Ukraine with destruction and dismantlement assistance directed toward accelerating strategic offensive arms elimination. CTR assistance will be used to support ongoing deactivation and dismantlement of strategic nuclear systems -- missiles and launchers, such as silos, heavy bombers, and missile carrying submarines -- according to START I and the January 1994 United States-Russian-Ukrainian Trilateral Agreement. It will also support and accelerate elimination of Russian strategic delivery systems under START II.

The CTR program will also continue to provide assistance to enhance the safety and security of nuclear materials with emphasis on strengthening the entire chain of custody from eliminating and dismantling the weapons, to design and construction of a fissile material storage facility in Russia, and to monitoring the storage of the plutonium resulting from dismantlement. Plans call for CTR to provide additional assistance to the Russian Ministry of Defense to strengthen the regime of weapons security and control by building upon existing Russian national material control and accounting and physical protection policies and practices to assist in preventing the proliferation of nuclear weapons. Specifically, future CTR assistance will assist Russia in developing programs and national resources to ensure the effective regulatory oversight of material control and accounting and physical protection policies and strengthen effective technical support for material control and accounting and physical protection policies -- including resources for training, developing, and implementing technologies and equipment.

Another key CTR project involves assisting Russia to destroy the 40,000 metric tons of declared chemical weapons agent inherited from the Soviet Union. Without substantial technical and monetary assistance from the United States and other countries, Russia will have difficulty meeting the Chemical Weapons Convention destruction schedules. Through the CTR program, the United States is considering substantial assistance in the design and construction of a prototype chemical munitions destruction facility, capable of destroying 500 metric tons of nerve-agent-filled artillery munitions per year.

CONCLUSION

The CTR program represents a small investment when compared to the overall size of the DoD budget and to the costs of major U.S. defense systems. This modest investment, $1.236 billion since FY 1992, has contributed to significant reductions in the threat posed by the former Soviet nuclear arsenal. Continuing the CTR program will allow the United States to pursue not only the objectives specific to this program, but also overarching objectives and interests bearing on U.S. national security and global nuclear stability. The future payoffs can be enormous: denuclearization of Ukraine and Belarus (Kazakstan is already nuclear weapons free, thanks in part to CTR assistance); accelerated Russian strategic arms reductions to START II levels; initiation and acceleration of the destruction program for Russian chemical weapons; enhanced security, safety, and control of nuclear weapons and fissile material in Russia; progress in moving the WMD scientific and industrial infrastructure in the NIS to civilian commercial activities; and increased defense and military-to-military contacts. All of this will be made possible by a program whose FY 1996 budget of $298 million represented less than two-tenths of one percent of the entire DoD budget.

The United States spent billions, perhaps trillions, of dollars during the Cold War defending against Soviet weapons of mass destruction. CTR assistance has made substantial progress in reducing the threat from these weapons and in helping to ensure new threats will not arise. The CTR program is a modest investment with a big payoff for U.S. security. By maintaining this program of defense by other means, the United States will continue to enhance its national security now and in the future.

Chapter 9

ECONOMIC SECURITY

INTRODUCTION

The end of the Cold War brought dramatic changes to DoD's relationship with the national and world economies. With significant changes in military missions and sharp reductions in defense spending, the Department must rely increasingly on the broader commercial world, and less on defense-unique industries, to equip its forces. A strong military requires a robust commercial and defense industry. Therefore, economic security is a vital issue for the Department. The Department is determined to respond effectively to this new environment and is adjusting its policies accordingly. It initiated new ways to conduct business -- with the business community, with other governments, and in its own operations. In each case, DoD is changing policies and programs to ensure national and economic security, to guarantee that the military continues to be well prepared to meet future threats.

DoD -- A SMALLER CUSTOMER, CHANGING NEEDS

During the Cold War, DoD developed leading-edge technologies and industrial capabilities to meet unique requirements. Any commercial applications were incidental to meeting national security needs. Today, the Department finds itself in an entirely new environment. First, DoD budgets have declined dramatically in recent years while the global economy continues to grow. Second, many leading-edge technologies that will be critical to success on future battlefields (for example, electronics, computers, information processing, and communications) come from the commercial sectors of the global economy.

As a result, the Department can no longer afford to rely solely upon defense-unique capabilities. To continue to provide U.S. 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. When developing new systems, DoD prefers commercial options. The Department will develop military-unique capabilities only after it has determined that commercial technologies and products 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.

THE DEFENSE INDUSTRY RESTRUCTURES

Although reductions in the defense budget have sharply reduced defense industry sales, defense contractors generally remain profitable, in part by restructuring and consolidating. Restructuring and consolidation are normal and traditional business responses to declining demand. Industrial restructuring includes reducing factory size, closing unneeded factories, merging divisions, streamlining operations, reengineering key processes, and cutting corporate workforces. Recent examples of defense industry consolidation include the Lockheed-Martin merger, Raytheon's acquisition of E-Systems, and Loral's purchase of Unisys Defense Systems. Additional consolidations in key industries can be expected for the next two or three years. These steps result in short-term costs for the companies, but much greater long-term operating and overhead savings with lower costs expected for DoD.

IDENTIFYING ESSENTIAL INDUSTRIAL CAPABILITIES

Most defense firms are reducing excess capacity, streamlining processes, and revamping supplier relationships. For example, several prime contractors made a ten-to-one reduction in their direct suppliers,

going from thousands to hundreds of suppliers. The sum total of these actions led to increased efficiencies and reduced defense product costs -- a better value for taxpayers.

As this process continues, DoD must actively assess changes in the defense industry to ensure essential capabilities (specialized equipment and facilities, skills, and technological knowledge) needed to meet defense requirements are preserved. Some capabilities required for national defense are defense-unique -- they have no commercial counterparts and must depend upon defense markets for survival. The Department will take appropriate steps when necessary to preserve such essential capabilities. Finally, it is DoD's objective to preserve essential capabilities, not any particular company. DoD neither can, nor should, attempt to preserve all capabilities -- only those both essential and genuinely at risk.

PAST YEAR DOD ACCOMPLISHMENTS

Developed Procedures for Analyzing Industrial Capabilities

DoD is striving to understand the changes underway in its supplier base. It has developed assessment methods to make informed judgments and defined policies for action when required to preserve essential capabilities. DoD is providing the Services and their program offices with the tools to make appropriate judgments about industrial issues and to integrate those judgments into the regular budget, acquisition, and logistics processes. Ensuring consistency in DoD's industrial decision making required developing a comprehensive set of guidelines specifying the conditions under which the Department would take steps to preserve an industrial capability. The military departments are testing these guidelines in the field.

Published Handbook to Guide Implementation

On July 31, 1995, DoD issued a draft directive for analyzing essential industrial capabilities, accompanied by a draft how-to handbook entitled *Assessing Defense Industrial Capabilities*. The handbook explains the assessment process and circumstances under which the Department will take special action to preserve an industrial capability. The assessment handbook lays out the three questions DoD must answer:

- Is the industrial capability needed to meet a defense requirement truly unique?
- Is DoD really in danger of losing that capability? (Note that losing a current supplier does not necessarily mean the capability itself will also be lost.)
- If a needed capability is really endangered, what is the most cost-effective remedy, if any (beyond simply continuing production)?

The handbook details the steps DoD managers should take to answer these questions.

The draft directive makes the Service Acquisition Executives responsible for approving all industrial capability preservation investments associated with Acquisition Category (ACAT) programs. In addition, the directive requires the approval of the Under Secretary of Defense for Acquisition and Technology for such expenditures of $10 million or more per year. DoD expects to issue the directive and accompanying handbook in final form in early March 1996.

Completed Important Industrial Sector Assessments

During the past 12 months, OSD and the Services conducted several key assessments of changing conditions in the defense industry. These reports include assessments of the Space Launch Vehicle, Conventional Ammunition, Heavy Bomber, Helicopter, Meal Ready-to-Eat, Torpedo, and Tracked Combat Vehicle industry sectors. Other industrial assessments are in progress.

These different assessments consistently led to similar conclusions. Although significant reductions and downsizing within the defense industry continue, DoD found very few cases where essential capabilities are endangered, even given low production rates. In those few cases, the Department is taking steps to assure essential capabilities will continue to be available. DoD is incorporating industrial considerations as a routine part of its acquisition, logistics, and budgeting processes, and advancing industrial capability education within the elements of the Department. The Department will continue to focus in a timely and cost-effective manner on those industrial capabilities which are at risk and which may require special action to be sustained.

DEFENSE RESPONDS: NEW WAYS OF DOING BUSINESS WITH BUSINESS

In September 1994, DoD submitted a report to Congress describing its processes for addressing industrial issues and identifying progress. The report, entitled Industrial Capabilities for Defense, analyzed the changed environment for defense, and discussed the Department's initiatives to respond accordingly. Key findings in the report focused on:

- Achieving acquisition reform.
- Taking advantage of dual-use and commercial technologies.
- Encouraging industry restructuring.
- Recognizing commercial imperatives.
- Improving communication with the business community.

DoD remains steadfast in its efforts to address these issues.

Achieving Acquisition Reform

The Department's efforts to realign the acquisition process to reduce the use of military-unique specifications and standards, to use simplified acquisition procedures, to increase electronic data interchange/electronic commerce, 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 activities are underway and are described in detail in the chapter on Acquisition Reform.

Taking Advantage of Commercial and Dual-Use Products and Processes

In February 1995, the Department issued a report entitled *Dual Use Technology: A Defense Strategy for Affordable, Leading-Edge Technology*. This report summarized the goals and objectives of DoD's dual-use strategy and outlined implementation actions. DoD's dual-use objectives are to break down the barriers between the commercial and defense industries, and to realize the benefits of civil-military integration in both research and development (R&D) and manufacturing. These benefits include an increased rate of innovation in defense systems, and reduced cost of such systems.

The strategy for achieving dual-use objectives consists of three pillars:

- Investment in R&D on dual-use technologies.
- Integration of defense and commercial production.
- Insertion of commercial technology into military systems.

The Flat Panel Display (FPD) Initiative is an example of the dual-use technology policy at work. The initiative advances R&D of flat panel displays, encourages U.S. industry investment, and inserts the results of that R&D into military systems. One outcome of this program is the replacement of cathode ray

tubes used for cockpit displays in several aviation systems with advanced FPDs that provide increased capabilities and reliability at reduced cost. Implementing the initiative will help ensure the U.S. FPD production base, serving both the defense and commercial markets, providing early, assured, affordable access to this vital technology for meeting defense needs.

Key elements of the Department's dual-use efforts are included in Service and Advanced Research Projects Agency Core Technologies research and development, and the Technology Reinvestment Project. The latter seeks to move promising research results into application and make them more affordable to DoD through cooperative dual-use programs with industry.

Encouraging Industry Restructuring

The Department continues to encourage much-needed rationalization in the defense industry. Since excess capacity in defense firms frequently translates into higher weapons costs, rationalization generally brings a clear cost savings to the Department and to U.S. taxpayers. While consolidations and restructuring may create efficiencies that benefit the Department, they also require DoD's active attention and involvement. Consolidation carries the risk that DoD will no longer benefit from the competition that encourages defense suppliers to reduce costs, improve quality, and stimulate innovation. DoD's interests include realizing cost savings; preserving essential research, development, and production capabilities; preserving a core of skilled personnel; and assuring efficiency and quality. Accordingly, the Department has become more active in antitrust reviews of the tradeoffs and risks associated with defense industry mergers, acquisitions, and joint ventures. The Department assesses proposed combinations in terms of cost savings, competition, and industrial and technological capabilities, and then provides its judgment to the Federal Trade Commission or Department of Justice, as appropriate. To date, DoD has found substantial savings in case after case. Where DoD has had issues, it arranged specific business restrictions or contract changes to address them.

The Department realizes that in order to achieve dramatic savings through consolidation and restructuring, it may have to share in restructuring costs. It makes economic sense to consider sharing these short-term costs to realize long-term savings. Under the law, the Department cannot share the costs unless and until it determines the benefit to DoD and U.S. taxpayers outweighs the expense. DoD has established appropriate procedures to allow such costs if they will produce savings. While the leading incentive for corporate restructuring is better corporate performance and profitability, sharing the restructuring costs may result in healthier corporations, thereby improving the economic outlook of U.S. businesses and their ability to meet DoD's needs more affordably.

Balancing National and Economic Security: Export Controls

The Department recognizes national security and economic security issues are increasingly intertwined. One area where DoD has focused particular attention is ensuring that export controls protect U.S. national security interests while avoiding unnecessary burdens on its commercial and defense supplier base. Examples include efforts to rationalize controls in the post-Cold war era. As in 1993, the Administration has again updated controls on computers. In the past two years, rapid technological advances in this sector have progressed to a point at which previous levels of controls are being overtaken by international availability in selected areas. The Administration has also spearheaded the Commerce Department's export control process in ways that improve responsiveness to exporters while strengthening DoD's role in the review of licenses. The Administration has also undertaken a review of the controls on communications satellites and aircraft engine technology with a view toward updating criteria for differentiating jurisdiction of export controls for these items under the State Department Munitions List or

the Commerce Department's Control List. DoD is also working with Congress on reauthorization of the Export Administration Act, which has not been updated since 1988.

A New Dialogue: Better Communication with Business

The Department is striving to enhance communication with the business community. DoD requires a better understanding of industry's views to ensure that industry continues to supply the armed forces with military systems of unquestioned technological superiority during this period of dramatic change. To this end, DoD has drawn on the capabilities of the Defense Science Board to provide advice on defense business issues. The Department is also committed to more consultation with industry, through both formal and informal channels.

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 places a high premium on interoperability -- ensuring U.S. systems are compatible with allied systems. This new emphasis on interoperability, to include military 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. The United States and its allies are being challenged to do more with fewer resources; interoperability provides needed leverage. International cooperative efforts offer a real chance to enhance interoperability, stretch declining defense budgets, and preserve 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, the continuing cooperative efforts under the NATO Airborne Warning and Control System (AWACS) program, the Multifunctional Information Distribution System (MIDS), Theater Missile Defense, and Allied Ground Surveillance. The Department is now working with allies in Europe and Asia to explore new possibilities, including the Medium Extended Air Defense System (MEADS) and NATO Airborne Ground Surveillance efforts.

The international cooperative R&D program has led to sharing of military technology among allies, as well as to development of joint equipment to improve coalition interoperability. Such items include advanced aircraft; combat vehicle command and control, communications systems interoperability; and ship defense.

As DoD takes greater advantage of the opportunities in international defense cooperation and commerce, it continues to address the risks of the proliferation of weapons of mass destruction and advanced tactical systems. DoD has worked to ensure that agencies understand the nature and importance of the February 1995 Conventional Arms Transfer policy and take its tenets fully into account when pursuing cooperative international defense programs and sales. As a result, both economic security and national security interests are pursued and protected.

DoD has also taken steps to improve the effectiveness and efficiency of international cooperation. An International Armaments Cooperation Handbook has been developed to provide a compendium of current policy, key processes, and points of contact for use by persons working cooperation issues in the Department. In addition, by streamlining the international cooperative agreement review process in the Office of the Secretary of Defense, the average processing time for such reviews has been reduced from 130 days to 30 days.

NEW WAYS OF DOING BUSINESS WITHIN DOD

The Department is undertaking several initiatives to give greater recognition to economic and commercial imperatives by restructuring the way it conducts business.

Privatization and Outsourcing

The Department of Defense has embarked on a vigorous effort to more fully utilize privatization and outsourcing for many functions it now does for itself. Private corporations have used a similar strategy to lower costs, improve performance, and refocus their human and financial resources on their core businesses. There are numerous opportunities to privatize and outsource within the Department to achieve greater efficiencies while enhancing effectiveness.

DoD is closely analyzing its own support operations to determine where it can outsource, thereby improving readiness and generating funds for modernization. In August 1995, the Deputy Secretary of Defense established an Integrated Policy Team (IPT) for Privatization and Outsourcing to determine opportunities, identify obstacles, and develop solutions and strategies for outsourcing functions currently being done by government. That team, chaired by the Deputy Secretary of Defense, includes the Vice Chiefs of Staff of the Military Services, the Under Secretaries of the military departments, as well as the heads of key defense agencies.

The IPT is organized into working groups which are assessing initiatives in depot maintenance, materiel management, family housing, base commercial activities, education and training, and finance and accounting services. However, the Department is not limiting its review of privatization to these areas or to those areas highlighted by the recommendations of the Commission on Roles and Missions of the Armed Forces. The Department intends to make the review of privatization opportunities part of its ongoing process to achieve efficient and effective support of joint military operations. In addition to the IPT, a Defense Science Board Task Force on Privatization is examining this area and will make recommendations to the Department for more effective use of privatization and outsourcing.

Preliminary reviews indicate that legislative and administrative changes may be necessary to accomplish some of these initiatives. Consequently, the IPT working groups will include in their detailed reviews recommendations for new legislation or changes to existing laws. The Department is also discussing with the Office of Management and Budget administrative changes necessary to facilitate the utilization of this innovative management tool.

This broadly based initiative of the Department of Defense seeks to free up valuable resources and obtain needed goods and services in the most efficient and effective manner possible.

Base Closing -- Restructuring Continues

Closing military bases no longer needed continues to be a high priority for the Department. DoD is closing and realigning bases in the United States as a result of decisions made through base closure processes in 1988, 1991, 1993, and 1995. The chapter on Installations and Logistics describes the 1995 Base Realignment and Closure process and the Department's efforts to structure and manage its installations, including the use of private capital in housing.

Reinventing the Base Reuse Process

The Department continues to make base reuse a high priority and has, in the past year, taken large strides to improve the way former military bases are converted to civilian use. Not only has the Department created a faster base reuse process, but decision making both in Washington and at the local level has become more integrated. These changes have led to numerous success stories throughout the country of communities redeveloping base property in ways that strengthen local economies and create jobs.

In 1993, after reviewing the historical base property disposal process, the President launched a plan to support faster redevelopment at base closure communities. Title XXIX of the National Defense Authorization Act for FY 1994 (P.L. 103-160) and the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (P.L. 103-421) substantially improved base closure laws and gave the Department legal authority to implement the President's proposals.

The changes contained in these two laws, along with other improvements to the process, were implemented in regulations issued by the Department along with a *Base Reuse Implementation Manual*. This manual, developed by a joint Office of the Secretary of Defense and Service working group, provides implementing guidance to speed up and improve the reuse process. In addition, the Department published the *Community Guide to Base Reuse* which provides information intended for local officials, Local Redevelopment Authorities (LRAs), and the general public, including practical advice on organizing an LRA and developing and implementing a redevelopment plan. For commanders at closing bases, the Department also updated its handbook, *Closing Bases Right*.

FASTER BASE REUSE PROCESS

The Department of Defense recognizes that to promote economic redevelopment and rapid job creation, it must expedite the process of making real property available for reuse at closing and realigning bases. Accordingly, the new reuse regulations and manual streamlined the federal screening process and created a faster reuse planning and property disposal process.

DoD and federal screening are now accomplished concurrently and begin even before the base closure and realignment recommendations formally become law. By determining what property will be made available to the local community faster, DoD is enabling the LRA to complete its reuse plan more quickly. Faster reuse planning leads to faster property transfers, which benefit the Department, as well as communities. Communities benefit from the quicker economic recovery and DoD benefits when a community takes over the financial responsibility for base protection and maintenance.

Additional legislative changes have improved the process. For example, the Department can now offer prospective interim-use tenants long-enough lease terms to warrant relocation to the base. In the past, redevelopment opportunities were lost because the Department was unable to offer lease terms long enough for the private sector.

INTEGRATED DECISION MAKING

As part of the Department's improvements to the decision making process, local communities are integrated into the federal government's decisions. During the DoD and federal screening process, all interested parties are encouraged to contact and work with the LRA to have their needs considered as part of the comprehensive local planning process. The Department also placed a new emphasis on personal property disposal in accordance with community reuse plans. Accordingly, all decisions on the movement of personal property are made in consultation with the LRA.

The Base Closure Community Redevelopment and Homeless Assistance Act of 1994 created a new process for addressing the needs of the homeless at base closure sites where local communities work along with homeless assistance providers to decide how best to address homeless needs. This change shifts control and responsibility from Washington and the federal government to local communities.

DEMONSTRATED RESULTS

Already, the redevelopment of closed bases has created over 12,000 new jobs and over 300 tenant businesses. For bases closed more than one year, nearly 60 percent of the lost civilian jobs have already been replaced.

England Air Force Base in Alexandria, Louisiana, and Chanute Air Force Base in Rantoul, Illinois, have become the engines of their communities' economic growth by creating over 2,000 jobs on base less than two years after closure. These new jobs replace more than the original number of civilian jobs lost and are spurring further employment throughout the communities.

The former Pease Air Force Base in Portsmouth, New Hampshire, is now the Pease International Tradeport, with more than 1,500 new jobs since closure. The Tradeport currently has 36 lessees occupying over 855,000 square feet of building space. Finally, on the site of the former Sacramento Army Depot in California, Packard Bell is producing computers -- and was doing so even before the final property transfer was completed. The company already employs 5,000 people at this site and is expanding rapidly.

CONCLUSION

DoD's continued need to field and support the most advanced weaponry now and in the future requires it to take advantage of the defense and commercial industrial and technology base. Defense budgets are no longer large enough to accommodate all defense acquisition needs through a defense-unique industrial base. For the U.S. military to continue to have the most advanced weaponry, the Department is adjusting its policies. It must continue to 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. It must build on the gains achieved through initiatives to date. Finally, it must change the way it does business itself through restructuring and community reinvestment. The Department is confident these policy changes will strengthen both national and economic security, and ensure the military continues to be prepared to meet threats of the post-Cold War era.

Chapter 10

NATIONAL SECURITY SPACE ORGANIZATION AND MANAGEMENT

INTRODUCTION

For the past several years, Congress has expressed concerns about the Department's organization and management of space activities. These concerns involved the basic processes governing defense and intelligence space programs and spanned policy, resources, requirements, acquisition, operations, training, and support to the warfighter.

In response to Congress's concerns, the Department conducted a review of space organization and management that involved the Office of the Secretary of Defense (OSD), the Joint Chiefs of Staff, defense agencies, the Services, and the Intelligence Community. The review addressed the complete range of national security space activities, including the Department's relationship to the Intelligence Community, and resulted in a series of management initiatives. DoD is taking a two-step approach to the management of national security space activities. The first step is to improve the integration and coordination of all DoD space activities. The second step involves improving the integration and coordination of defense and intelligence space activities.

DOD MANAGEMENT INITIATIVES

DoD has consolidated space responsibilities and functions within the Office of the Secretary of Defense into a single new organization under a Deputy Under Secretary of Defense for Space (DUSD(Space)), who reports directly to the Under Secretary of Defense for Acquisition and Technology (USD(A&T)). The DUSD(Space) serves as the principal staff assistant and advisor for space matters with responsibility for DoD space policy, as well as oversight of space architectures and acquisition programs. In this capacity, the DUSD (Space) is responsible for interfacing with U.S. government agencies and Congress, and for representing the Secretary of Defense at all interagency deliberations and international negotiations regarding space matters.

Certain space-related responsibilities and functions will be shared between the DUSD(Space), the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C3I)), and the Director, Defense Research and Engineering (DDR&E). The DUSD(Space) is responsible for DoD policy and planning guidance for space activities including military uses of national space systems, while the ASD(C3I) is responsible for DoD policy for functional C3I activities. The DUSD(Space) oversees the development of an integrated DoD space architecture, while the ASD(C3I) is responsible for the Department's functional C3I architecture.

The DUSD(Space) is also responsible for oversight of space acquisition programs and, in general, shares with the ASD(C3I) responsibility for oversight of space system user equipment. Such shared oversight responsibility may transition from the ASD(C3I) to the DUSD(Space) on an exception basis at Milestone Zero of the defense acquisition process. The DUSD(Space) will have lead responsibility for oversight of mission and user equipment for space systems (e.g., Milstar and Global Positioning System), where changes to such equipment would significantly affect the space segment, or in cases where such equipment will be acquired only in small numbers. With respect to space technology, the DUSD(Space) is

responsible for assessing future space systems requirements and recommending changes to space-specific technology goals to DDR&E. DDR&E is responsible for all DoD science and technology activities.

In addition to providing a DoD focal point for space matters, the consolidation of space oversight responsibilities within OSD facilitates the streamlining of the Department's space policy and acquisition decision making processes. Acquisition reform initiatives will apply to space acquisition matters. The Defense Acquisition Board (DAB) structure has been augmented by a space Overarching Integrated Product Team (OIPT) which supports the board by reviewing major space systems acquisition programs. Integrated Product Teams will support the DAB and Space OIPT's reviews of major defense acquisition programs. The Integrated Product Teams represent an integrated approach to addressing issues by involving all stakeholders early in the process.

The Department's existing planning, programming, and budgeting system process has not been changed. DoD has established subactivity codes in the OSD Budget Review System to identify and track funds for all space resources. This will facilitate better management of the Department's resources for space activities and provide Congress greater visibility into the funding for such activities.

The Vice Chairman of the Joint Chiefs of Staff and the Vice Chiefs of Staff of the Services (or equivalent) will review and validate military requirements for intelligence through the Joint Requirements Oversight Council process. These requirements will then be passed to the Director of Central Intelligence to be aggregated with other intelligence requirements. This will help improve the definition of military requirements to be satisfied by the development, acquisition, operation, and use of airborne and space-based reconnaissance systems.

The Department will retain a decentralized structure for the acquisition of space programs with existing lines of authority in accordance with Title 10, U.S.C. There will be a presumption that the Air Force will be assigned responsibility for the acquisition of DoD multi-user space programs. If another Service believes it is better able to execute that responsibility for a particular program, it will have the opportunity to make its case to the Defense Acquisition Executive (DAE), who will assign responsibility for the program. Acquisition responsibility for Service-unique space programs, which may include ground terminals and other user equipment, will remain with each Service.

Finally, the Department has established a Space Architect organization, which is responsible for developing an integrated defense space architecture and coordinating that architecture with counterparts in the Intelligence Community. The DoD Space Architect function is administratively attached to the Air Force with the office director an 0-8 flag officer. The DoD Space Architect reports to the DAE through the Air Force Acquisition Executive for a two-year tour. The Architect's staff is comprised of representatives from the Services and Defense Agencies.

The DoD Space Architect is tasked to develop space architectures across the range of the DoD space mission areas and integrate validated requirements into existing and planned space system architectures. The first priorities will be to develop both, in coordination with the Intelligence Community, a future Military Satellite Communications architecture, which encompasses core DoD capabilities and civil and commercial augmentation capabilities, and a space control architecture.

DOD/INTELLIGENCE COMMUNITY MANAGEMENT INITIATIVE

The second step in DoD's approach to the management of national security space operations involves improving the integration and coordination of defense and intelligence space activities. This step is essential to address the fundamental concerns expressed by Congress and the independent Commission on

Roles and Missions of the Armed Forces about space organization and management. Besides the joint reviews currently conducted by the Deputy Secretary of Defense and the Director of Central Intelligence, the Joint Space Management Board (JSMB) has been established as a forum for senior management to address defense and intelligence space policy, acquisition, architecture, funding, and related issues.

The JSMB was formed to ensure that defense and intelligence needs for space systems (including associated ground-based subsystems) are satisfied within available resources, using integrated architectures to the maximum extent possible. The JSMB integrates policy, requirements, architectures, acquisition, and funding for defense and intelligence space programs. The JSMB also provides executive management for defense and intelligence space programs and oversight of the single National Security Space Architect, which will be formed through an eventual consolidation of the defense and intelligence space architecture functions.

The JSMB is co-chaired by the Under Secretary of Defense for Acquisition and Technology and the Deputy Director of Central Intelligence. The Executive Committee of the JSMB, vested with the full authority to act for the Secretary of Defense and the Director of Central Intelligence, within the bounds of the charter, includes the co-chairs, the Vice Chairman of the Joint Chiefs of Staff and the Executive Director, Intelligence Community Affairs.

CONCLUSION

The Department's space management and organizational initiatives have directly addressed the concerns expressed by Congress and the Commission on Roles and Missions of the Armed Forces. The implementation of these initiatives will improve DoD space management and the integration and coordination of defense and intelligence space activities.

Chapter 11

TECHNOLOGY FOR 21ST CENTURY WARFARE

INTRODUCTION

U.S. forces must be prepared to confront a wide range of potential opponents in the changing global environment. Virtually all potential opponents have access to a global market containing a vast array of modern technology. These technologies include advanced air, sea, and land weapon systems; access to space based systems; dual-use technologies that can be used to produce weapons of mass destruction; and sophisticated communications and information management systems. Maintaining the technological advantage so vital to military success is critical. As the United States shapes its forces to meet the challenges of a changing world within the constraints of available resources, it must rapidly leverage present and emerging technologies to provide the best possible equipment, doctrine, and training for American soldiers, sailors, marines, and airmen.

REVOLUTION IN MILITARY AFFAIRS

Today's challenges go well beyond confronting an increasing range of potential opponents who have access to modern 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. Examples of this in the 20th century include the development of battlespace warfare -- the ability to conduct warfare from, or within, the aerospace medium -- blitzkrieg, amphibious warfare, carrier aviation, and nuclear armed ballistic missiles. The term revolution is not meant to insist that the change is rapid -- indeed past revolutions have unfolded over a period of decades -- but only that the change is profound, and the new methods of warfare are far more powerful than the old.

Two major ideas are emerging on how warfare may change. First, long-range precision strike weapons, coupled to very effective sensors and command and control systems, will come to dominate much of warfare. Rather than closing with an opponent, the preferable operational mode will be destroying him at a distance. Thus far, this idea has been elaborated most in connection with a continental air-land theater, but it seems plausible that long-range precision strike operations may also play a prominent role in power projection, war at sea, and space operations.

The second idea is the emergence of what is often called information warfare. Information technologies are already dramatically improving the ability to gather, process, and disseminate information in near-real time. Protecting the effective and continuous operation of one's own information systems, and being able to degrade, destroy, or disrupt the functioning of the opponent's, will become a major operational priority or focus.

Not only will the Information Age provide warfighters a breadth and depth of information unparalleled in military history, but precision strike weapons will take full advantage of that information throughout the depth of the battlespace. In the case of both long-range precision strike and information warfare, planning for 21st century warfare must take into account that major adversaries will also have access to the

enabling technologies. Selecting appropriate technologies and developing the means to rapidly evaluate and incorporate operational and organizational innovations are major challenges to understanding the RMA and exploiting the capabilities it represents.

RESPONDING TO PROLIFERATION OF MILITARY TECHNOLOGY

Particularly important is the requirement for a process 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 low cost. This flexibility is especially critical in the present global environment.

ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (ACTDs)

ACTDs are a major initiative of this Administration which, as a component of the acquisition reform process, specifically address the need for rapid technology insertion into the forces. The ACTD concept is designed to accelerate the transition of maturing technologies that demonstrate a potential to rapidly provide improved military capabilities or technological solutions to specific operational challenges. In doing so, it draws technologists and military operational commanders into closer working relationships. Traditionally, DoD has taken maturing technologies into the field to evaluate utility and assess military potential. During these evaluations, the operational commander was frequently assigned a supporting role and was only in a position to observe, rather than actively participate. Based on recommendations from several studies, including the Packard Commission and Defense Science Board, the ACTD process requires the operator to play a much more proactive and responsible role. The operator will sponsor the ACTD and will be actively involved in determining operational utility. This results in a more rapid and effective evaluation of advanced technology and where appropriate, its transition to the operational forces. ACTDs offer a means to provide innovative solutions to emerging critical military needs in a timely manner.

ACTDs are driven by the military user and the user's critical warfighting needs. Their 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, organization, and concept of operation that exploit the new technologies. It will also allow the user, based on experience in the field, to comment on the capabilities 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 and low cost demonstration phase of a system's life cycle. In many cases, the user's input will provide the basis for a more realistic statement 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. ACTDs provide the operator an opportunity to work with the developer and evaluate the technology, leading to more informed acquisition decisions. ACTDs also provide the commander with enough equipment to provide a militarily significant capability at the end of the demonstration and support the systems for an additional two years in the field.

The ACTD is not a series of new programs, but a transition of capabilities to the warfighter that seeks to focus the existing, substantial investment the Services and agencies have made in technology programs. For instance, the first 10 approved ACTDs incorporate $2.9 billion (FY 1995-2001) of Service and agency technology efforts and $199 million in centralized OSD funding. OSD augmenting funds integrate multiple technology programs, often from several Services and agencies, into a single ACTD. This funding also provides for the acquisition of a number of systems necessary to evaluate military utility

during exercises or operations. Lastly, OSD augmenting funds are employed to provide technical support for the ACTD for two years of operations in the field.

Selection Criteria

To provide focus, the ACTD process has developed selection criteria that are used to guide both the technologist and the military operational commander in structuring a specific ACTD.

- First, the technologies under consideration and the operational approach must offer a potential solution to an important military problem or must introduce a significant new capability. The Joint Requirements Oversight Council, chaired by the Vice Chairman of the Joint Chiefs of Staff, and the unified commanders participate in the ACTD selection process.
- Second, the technologies must be mature.
- Third, each ACTD must develop an executable program and management plan.
- Finally, the ACTD must be completed within a two to four year time period and, if successful, provide operational support for two additional years.

ACTD Program Execution

Because of the diversity of technologies and military problems addressed in individual ACTDs, each is documented in its own management plan. The management plan serves as a memorandum of understanding between all participating parties in each ACTD. Most importantly, it is an agreement between the technology development manager and the operational commander. The management plan lays out a demonstration schedule and defines the measures of success desired in each ACTD. An oversight group is established for each ACTD to assist in problem resolution. A small advisory group composed of senior officers and civilians from the Services and Joint Staff provides advice on the general process and ACTD selection. Oversight of all ACTDs is maintained by a steering group composed of top level OSD and Service representatives, co-chaired by the Under Secretary of Defense for Acquisition and Technology and the Vice Chairman of the Joint Chiefs of Staff.

Outcome of an ACTD

Upon the conclusion of an ACTD, based on the results of the demonstrations, one of three possible decisions regarding further acquisition and employment of the technologies will be made. First, the ACTD may be terminated or restructured based on the evolved concept of operations and lessons learned. Second, if the operator recommends further acquisition, it may be possible to enter the formal acquisition process at some advanced milestone point, e.g., MS II or III. 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 may be particularly appropriate where only small quantities of the new equipment are required.

Acquisition Reform

The ACTD is an important element of the Department's comprehensive acquisition reform effort. The ACTD 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.

Table II-2

Approved ACTDs	
Rapid Force Projection Initiative	Precision Strike to Counter Multiple Launch Rockets
High Altitude Endurance Unmanned Aerial Vehicle	Medium Altitude Endurance Unmanned Aerial Vehicle
Precision Signals Targeting System	Cruise Missile Defense, Phase I
Synthetic Theater of War	Joint Countermine
Kinetic Energy Boost Phase Intercept, Phase I	Advanced Joint Planning

Table II-3

Additional ACTDs Approved for FY 1996	
Battlefield Awareness and Data Dissemination	Counterproliferation
Air Base/Port Biological Defense	Navigation Warfare
Combat Identification	Joint Logistics
Combat Vehicle Survivability	Low Life-Cycle Cost, Medium Lift Helicopters
Semi-Automated Imagery Processing	Miniature Air Launched Decoys

In the last year, the Medium Altitude Endurance Unmanned Aerial Vehicle (Predator) participated in Exercise Roving Sands, a major JCS-sponsored air defense exercise, and was operationally deployed to Europe in support of operations in the former Republic of Yugoslavia. During Operation Deliberate Force, the Predator system was highly praised for the support it provide the warfighter. The Advanced Joint Planning ACTD is well ahead of schedule at U.S. Atlantic Command and is providing rapid readiness assessment and planning tools that commanders have never had before. 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, this ACTD will demonstrate 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 in supporting mine countermeasure missions by building a system which exploits and enhances the synergy of new technologies working together in a coordinated architecture. In a second example, a Combat Identification ACTD was initiated to fix the most serious identification problems between air, land, and maritime forces. Each ACTD will leave those technologies that proved successful during the demonstrations with the operational commander as a residual capability.

CONCLUSION

In a period of unprecedented global proliferation of advanced technologies where the life expectancy of many technological systems is measured in months rather than years or decades, the ACTD approach provides a means of rapidly moving new capabilities into operational forces. ACTDs also provide a vehicle to explore the utility of new technologies combined with new concepts of operation or organizational changes that will help realize a Revolution in Military Affairs. 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 and in a manner which provides U.S. forces with timely capabilities to operate safely and effectively in a dynamic global environment.

Chapter 12

PERSONNEL

INTRODUCTION

The United States military maintains superior readiness and is the best-trained and best-equipped fighting force in the world. Advanced weapons give U.S. armed forces tremendous advantages, but U.S. national security ultimately relies on the quality and commitment of the men and women who serve in uniform and of the civilian employees who support them. That is why the Department of Defense continues to place the highest priority on recruiting, training, developing, and supporting U.S. service members and the civilian workforce.

FORCE STRUCTURE AND MANPOWER LEVELS

The Department has been extremely successful in accomplishing its two overarching drawdown goals: to maintain a high state of readiness and to treat people fairly. Principal features of the drawdown strategy include synchronization of personnel reductions and unit inactivations to maintain readiness, strategic evaluation of workforce needs, caring for individuals, and the pacing of reductions to access the numbers of new recruits required to maintain the needed mix of experience, grade, and skills.

Military reductions continued as planned in FY 1995. These included an Air Force reduction of 26,000, an Army reduction of almost 33,000, and a Navy reduction of more than 34,000. Consequently, at the end of FY 1995, the Air Force had completed 91 percent of its drawdown, the Army 95 percent, and the Navy 79 percent. The Marine Corps achieved its drawdown strength objective at the end of FY 1994.

The success with which these significant reductions have been made can be attributed to the Department's strategy to maintain a close linkage between force structure and personnel management programs. For example, a rapid achievement of the force structure outlined in the Defense Bottom-Up Review required significant congressional cooperation and support for temporary separation incentive programs, approved early retirement authorizations, transitional assistance, and relief from statutory constraints. These programs have allowed orderly downsizing with due consideration of the human dynamics involved in such a massive undertaking. Minimizing involuntary separations remains central to the Department's plans; the vast majority of the reductions have been accomplished through voluntary measures, a tremendous accomplishment in the context of an all-volunteer force. This has resulted in a right-sized force providing challenging career opportunities and one that is cost-efficient and sustainable.

Civilian downsizing has also been successful. Since FY 1989, the Department has reduced the civilian workforce by approximately 24 percent or 269,000 civilians; more than 53,000 of these reductions occurred in FY 1995. The Department continues to pursue a civilian drawdown strategy that calls for cumulative reductions in the civilian workforce between FY 1989-2001 of approximately 35 percent. Minimizing involuntary separations by promoting voluntary incentives is also a key feature of the civilian drawdown strategy. Consequently, fewer than 10 percent of civilian reductions in the past two years were through involuntary separations, which are so costly in morale, productivity, time, and money. To achieve this result, the Department used a variety of tools provided by Congress, including hiring freezes, the Priority Placement Program, separation incentives, out-placement assistance, and collaborative ventures with the Department of Labor and the Office of Personnel Management.

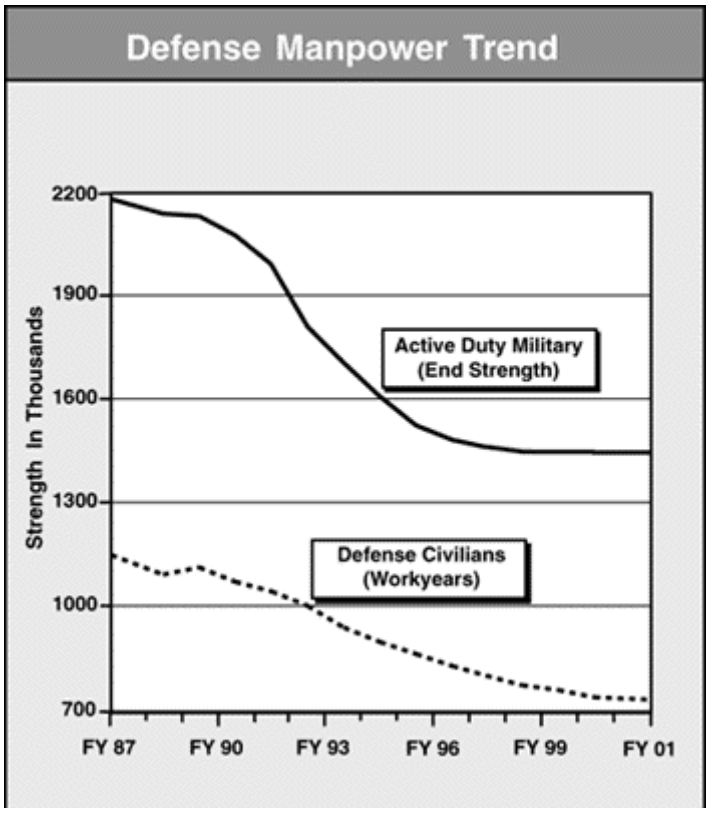
RECRUITING HIGH QUALITY PEOPLE

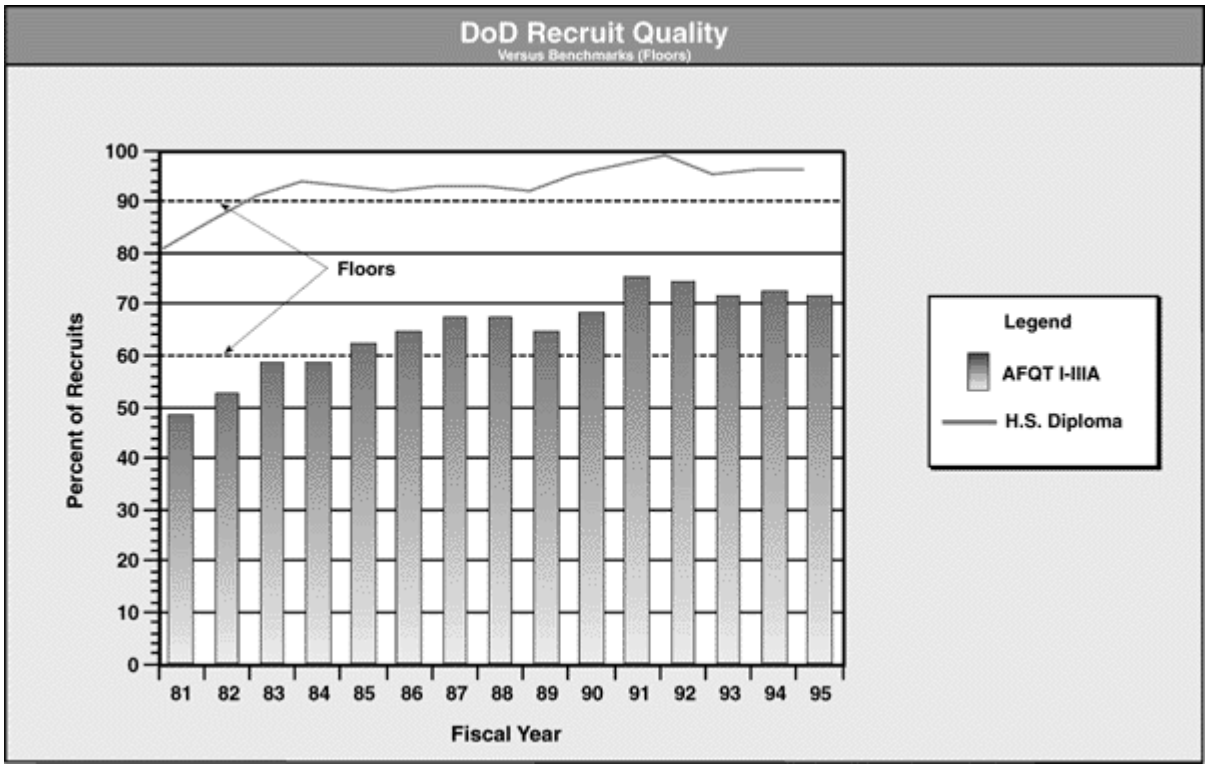
A steady flow of new recruits is essential to maintain a personnel force with the proper distribution of skills, and to ensure the balance of age and experience that supports the attainment of readiness. Each Service must enlist and appoint enough people each year to sustain the force and ensure seasoned and capable leaders for the future. DoD annually must recruit about 200,000 youth to join the full-time, active

duty armed forces, along with 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 more than 15 percent above current levels.

DoD values recruits with a high school diploma because years of research and experience show that those with a high school diploma are more likely to complete their initial three years of service. About 80 percent of recruits who receive a high school diploma will complete their first three years; yet only about 50 percent of those who failed to complete high school will make it. Those holding an alternative credential, such as a general equivalency diploma (GED), fall between these extremes. Over the past two years, more than 95 percent of all active duty recruits held a high school diploma, compared to the 75 percent of American youth, ages 18 to 23.

A separate indicator of quality is aptitude. All recruits take a written enlistment test, called the ASVAB (Armed Services Vocational Aptitude Battery). One component of that test is the Armed Forces Qualification Test, or AFQT, which measures math and verbal skills. Those who score at or above the 50th percentile on the AFQT are in Categories I-IIIA. DoD values these higher-aptitude recruits because their training and job performance are superior to those in the lower (below the 50th percentile) categories. Research shows a strong correlation between AFQT scores and on-the-job performance, as measured by hands-on performance tests (speed and accuracy of performing job-related tasks) across the range of occupations. Over 70 percent of recent recruits score above the 50th percentile of the nationally representative samples of 18-23 year olds.





Higher levels of recruit quality -- a traditional high school diploma which predicts perseverance, and higher aptitude which indicates performance potential -- serve to reduce attrition while increasing individual performance. In 1993, the Department established benchmarks, or floors, to sustain recruit quality. The figure above displays the recent success against those floors (90 percent high school diploma graduates; 60 percent top-half aptitude (Category I-IIIA)).

Challenges in a Changing Recruiting Environment

In recent years, American youth have shown declining interest in joining the military. Results from the 1995 Youth Attitude Tracking Study (YATS), however, show propensity was slightly higher than in 1994; 28 percent of 16-21 year-old men expressed positive propensity for at least one active duty Service, up from 26 percent in 1994. The Department remains concerned, however, because of the great demand placed on recruiters. According to the most recent recruiter survey, recruiter morale is down and stress is up -- most recruiters now work at least 60-hour weeks. Fortunately, Congress has authorized an increase of up to $100 monthly in recruiter special duty assignment pay, something recruiters surely have earned.

Over the past several years, enlistment propensity declined as the Services experienced serious cuts in recruiting resources. In FY 1994-95, recruitment advertising was increased, and the 1995 YATS results indicate a slight increase in propensity. Continued investment in recruiting and advertising resources is required, however, to assure that the pool of young men and women interested in the military will be available to meet Service personnel requirements in the future.

Congress increased the Department's advertising budget for FY 1995 and 1996 to help ensure American youth are acquainted with opportunities in the armed forces. In spite of U.S. armed forces downsizing, American youth need to receive the message the military remains not only one of the nation's largest employers, but also one of its best!

National Service and Recruiting Programs

The Department explored the impact of National Service on military recruiting and concluded that the two programs can coexist successfully because the National Service program's size is modest, and the

value of its benefits is lower in comparison with enlistment benefits offered by the military. Therefore, DoD believes both programs are correctly sized and structured. Anecdotal evidence suggests some National Service programs may even benefit recruitment marginally. The Navy and Americorps-affiliated Seaborne Conservation Corps, for instance, introduces high school dropouts to a military style of life and requires they earn a high school GED. Seven of the 42 members in the first graduating class enlisted in the armed services -- which they could not have done without the GED and may not have been inspired to do without the experience provided by the Seaborne Conservation Corps.

RECRUITING -- AN ESSENTIAL PRIORITY IN DOD

Because recruiting is vital to readiness, the Deputy Secretary of Defense established the Senior Panel on Recruiting in April 1994 to provide oversight at the highest levels of the Department. The standing panel is chaired by the Deputy Secretary of Defense and includes the Secretaries of the military departments and the Chairman of the Joint Chiefs of Staff; this group continues to meet regularly to review the status of recruiting. This panel deals quickly and effectively with any emerging problems.

DoD has focused on three major recruiting initiatives.

- First, in response to the declining propensity for 16-21 year-old males, especially for Blacks (however, the propensity for Blacks remains higher than the propensity for Whites) an extra $89 million was added for advertising in FY 1995. Congress increased recruiting resources (including advertising) for FY 1996 by $31 million. DoD has initiated focus group research to look at youth and adult influencer attitudes toward the military and to try to better understand why propensity is declining.
- Second, for the next several years, accession requirements appear to rise faster than programmed resources. DoD has encouraged the Services to reprogram to ensure adequate resources are available to meet recruit quantity and quality goals.
- Third, since surveys indicate higher recruiter stress and dissatisfaction, lower morale, and quality of life concerns, the Department directed the Services to review recruiting policies and practices with a goal of reducing pressures on recruiters. A recent joint-Service study has focused on numerous recruiter quality of life issues, some of which are listed in Table III-1. Results and recommendations have been briefed to the OSD staff, which is preparing a consolidated plan of action.

Table III-1

Recruiting Challenges and Responses

Issue	Current Efforts
Health Care	In August 1994, the Department addressed the issue of TRICARE Prime for members and their dependents in areas outside the normal areas of coverage. Other initiatives tentatively under review include waiving CHAMPUS deductibles and co-payments, providing a Health Care Management Program, and giving recruiters a medical debit card to guarantee payment to health care providers.
Housing	Many recruiters -- particularly those stationed in higher cost areas -- are inadequately reimbursed for housing costs; therefore, the Department now is evaluating the feasibility of establishing a leased-family housing program that would help those recruiters.
Child Care	The Department is reviewing the possibility to expand and use child care spaces in other government programs. This includes negotiating with the General Services Administration to obtain spaces for military members at 102 government-owned and leased locations nationwide.
Pay	DoD will implement authority to increase Special Duty Assignment Pay (SDAP) for recruiters from $275 to $375 per month.

Table III-2

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

FY 1995 Quality Indices			Accessions [a] (in thousands)			
Component/Service	**Percent High School Diploma Graduates**	**Percent Above Average Aptitude AFQT I-IIIA**	**FY 1995 Objectives**	**FY 1995 Actual**	**FY 1996 Planned [b]**	**FY 1997Planned [b]**
Army	96	69	62.9	62.9	68.0	90.7
Navy	95	66	48.6	48.6	57.0	57.2
Marine Corps	96	66	33.2	33.2	33.8	36.2
Air Force	99	84	30.9	31.0	30.7	30.3
TOTAL	96	71	174.8	175.8	189.5	214.4

[a] Includes prior service accessions.
[b] Based on Service Recruiting Production Reports and DoD FY 1997 Budget Estimates.

Table III-3

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

FY 1995 Quality Indices Non-Prior Service			Total Accessions Non-Prior and Prior Service (in thousands)			
Component/Service	**Percent High School Diploma Graduates**	**Percent Above Average Aptitude AFQT I-IIIA**	**FY 1995 Objective [a]**	**FY 1995 Actual [a]**	**FY 1996 Planned [b]**	**FY 1997 Planned [b]**
Army National Guard	82	54	60.6	56.7	68.6	64.1
Army Reserve	95	75	47.7	48.1	50.7	47.7
Naval Reserve	NA [c]	NA [c]	13.6	13.7	17.2	16.8
Marine Corps Reserve	98	77	9.6	9.9	10.2	10.5
Air National Guard	94	76	8.4	8.4	8.7	8.4
Air Force Reserve	94	78	8.8	8.5	6.9	8.7
TOTAL	90	67	148.7	145.2	162.3	154.2

[a] Based on Service Component Recruiting Production Reports.
[b] FY 1997 DoD Budget Estimates.
[c] Naval Reserve accessed only prior service recruits in FY 1995.

Recruiting for the Selected Reserve

With the increased reliance on the Reserve Components, continued manning by quality prior service and non-prior service recruits remains a priority. During recent years, the Department has experienced considerable success in recruiting for the reserve forces. Since 1991, the number of new recruits into the Reserve Components with high school diplomas has increased by 10 percent, and new recruits in the upper half of the Armed Forces Qualification Test categories has grown by 10 percent. There are, however, current and future dynamics that will make it increasingly difficult to maintain robust reserve force strength levels in the coming years. The perceptions caused by downsizing, reduced budgets, and inactivating local units all continue to give the public the impression the Reserves are no longer hiring, or that the Reserves are not a viable employment opportunity. Additionally, the approaching completion of the drawdown of the active forces will mean fewer service members entering the prior service pool for Selected Reserve membership, thus increasing the need for non-prior service recruiting. To meet this

challenge, increased advertising budgets and more recruiters are needed to achieve outyear missions, especially after the Reserve Component downsizing abates and accession missions increase.

The Assistant Secretary of Defense for Reserve Affairs convened a Reserve Component Recruiting and Retention Task Force to analyze the current state of supporting programs and to explore new and innovative ways to meet the mission. Prime among the topics this task force will explore is the utilization of the Selected Reserve Incentive Program, a series of bonuses for enlistment and reenlistment. The task force will also focus on intensifying retention efforts to reduce unprogrammed losses in the Selected Reserve that occur prior to reenlistment windows.

Full-Time Support to the Reserve Components

Full-time support personnel provide increasingly critical assistance in administering, recruiting, retaining, instructing, and training the Guard and Reserve. The full-time support program grew rapidly during the past two decades as the reliance on Reserve components in the Total Force increased. As the Total Force decreases in size, so will the full-time support program. However, the Department is working hard to ensure the full-time support force remains large enough to provide a trained and ready force supported by well-maintained state-of-the-art equipment. Table III-4 shows current and planned full-time support strengths.

Full-time support personnel provide the backbone of Guard and Reserve readiness. Additional missions and reliance will be placed on the Reserve components. With the multiplicity of demands being placed on part-time soldiers, it is imperative the effective use of the limited training time available to them be maximized. Full-time support personnel ensure training is planned, organized, and conducted with properly maintained equipment.

Table III-4

Full-Time Support Personnel *(End Strength)

	FY 1995 Actual	FY 1996 Planned	FY 1997 Planned	FY 1998 Planned
Army National Guard	49,180	49,854	49,504	48,714
Army Reserve	20,916	20,843	20,918	20,647
Naval Reserve	24,947	25,714	25,364	25,205
Marine Corps Reserve	6,669	6,609	6,685	6,685
Air National Guard	36,090	36,058	35,260	35,870
Air Force Reserve	16,920	17,122	16,736	16,421
TOTAL	154,722	156,200	154,467	153,542

* Includes Active Guard and Reserve, military technicians, Active component, and civil service personnel.

TREATING PEOPLE FAIRLY

Supporting Service Members

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, about half of which was designated for quality of life improvements. Those funds are targeted at three areas: compensation, married and bachelor housing, and family and community support.

Pay/Compensation Issues

In order to attract, motivate, and retain quality people, the armed forces 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 this nation's all-volunteer force. President Clinton has committed to support the full military pay raises authorized by law through the end of the decade -- an unprecedented commitment. The Department of Defense has implemented a cost of living allowance in areas of the continental United States where local costs (excluding housing, which is a separate allowance) exceed national average living costs by 9 percent or more. This program is now helping 30,000 military families that are assigned to high-cost areas. The Department is also moving to reduce the excessive absorption of housing costs now being experienced by those in uniform.

The Department continues to aggressively work initiatives to improve the military compensation system through a unified legislative and budgeting process. As a result, the Department submitted the following legislative initiatives, through the Office of Management and Budget; these were enacted as part of the FY 1996 National Defense Authorization Act:

- Basic Allowance for Quarters for E-6 without Dependents on Sea Duty will extend entitlement to quarters allowances for single petty officers assigned on sea duty. This allows these members to establish and maintain permanent residences ashore.
- Tender Sea Pay will establish continuous entitlement to Sea Pay for crew members assigned to ships designated as tenders. Currently, tender crew members only qualify while their ship is away from port.
- Family Separation Allowance-II for Geographic Bachelors will authorize family separation allowance during deployments for members who become geographic bachelors during permanent relocations.
- Servicemen's Group Life Insurance coverage will rise from $100,000 to $200,000 automatically. Coverage could still be declined or reduced if member does not want maximum.
- Dislocation Allowance for Base Realignment and Closure Moves will provide Dislocation Allowance to members who must relocate in a Base Realignment and Closure (BRAC) move. Current law requires service members to change jobs and have a government-funded move before receiving this allowance. This change will account for costs incurred due to local BRAC-required moves.

These improvements directly and measurably assist members of the armed forces and their families. Moreover, these investments constitute a sound means of preserving high levels of personnel readiness.

Promotions

The Services have worked hard to provide reasonably consistent promotion opportunities in order to meet requirements, ensure a balanced personnel force structure, and provide a meaningful opportunity for all service members. There is a common misconception that promotions have been frozen because of the drawdown, but that is simply not the case. Promotions have remained generally steady during the drawdown. Last year, the Services promoted over 110,000 soldiers, sailors, airmen, and marines into the top five enlisted grades (E5-E9). There has been only a slight increase in the average promotion time for some grades and skills. Officer promotion opportunity also has held steady, generally remaining within 5 percent of the levels before the drawdown began. For the future, the Department expects promotion points will improve and promotion opportunity will remain steady.

Force Stability

As the Services complete their downsizing, the focus shifts to the task of stabilizing the force. Any drawdown of the size that has been achieved, even one carefully and successfully managed, will cause

turbulence -- it is an inevitable by-product of change. Therefore, DoD is now taking steps to return a sense of stability to the armed forces.

One of the most important elements of this effort is Secretary Perry's Quality of Life Initiative (see Quality of Life chapter for a complete discussion of this initiative). Less quantifiable factors also contribute to a stable environment for service members. These include visible and challenging career opportunities, healthy military communities, the satisfaction of reasonable expectations for the future, and the availability of a military career for those who perform well. Compensation, housing, and family support, the central points of the initiative, are keys to creating the sense of stability.

Finally, personnel tempo (PERSTEMPO), the amount of time service members spend away from their home base, is an important component of force stability. PERSTEMPO has increased somewhat since the end of the Cold War, particularly for the Army and Air Force, as DoD has reduced forces stationed overseas. The Navy and Marine Corps, though more accustomed to routine deployments, have also seen some increase in PERSTEMPO. If this rate were to become too high, it could have a negative effect on the stability of the force. But, while there are certain specific units and military specialties which have been used repeatedly, DoD believes the current PERSTEMPO of the force as a whole is sustainable. PERSTEMPO has been historically high for the Services and has increased since the end of the Cold War. Despite the increase in PERSTEMPO, overall morale, retention, and readiness remain high. This is due, in part, to the fact that service members have always derived a sense of purpose and satisfaction from the opportunity to perform the functions for which they joined the military. However, there are some indications that high PERSTEMPO in certain units has a negative impact on the quality of life of members. For the small number of units subjected to a high deployment rate, DoD is now taking steps to alleviate that strain, including increased use of the Reserve Component. (See Readiness chapter for a full discussion of PERSTEMPO initiatives.)

Separation and Transition

While the number of separations in the remainder of the 1990s is expected to be somewhat lower than in the prior decade, substantial numbers will continue to leave the military each year for a variety of reasons. Throughout the 1990s, the military services will separate between 250,000 and 300,000 active duty personnel annually. Even after the drawdown, separations will average 250,000 per year.

Military personnel have certain advantages in the job marketplace; they are, on average, better trained, educated, and disciplined than their civilian counterparts. However, they also have three distinct disadvantages in seeking and securing civilian employment:

- Most have never competed in the civilian labor force for a job and even those that have, have not done so for at least three or four years and many for as many as 20 to 30 years.
- Most military members live the majority of their daily lives in a largely separate society and have not established the civilian networks key to successful job hunts.
- Many military members are currently assigned great distances from job markets they want to enter, and a substantial portion are either afloat or overseas.

On a per capita basis, unemployment costs to DoD have been significantly reduced as a result of efforts to provide job assistance and pre-separation counseling through the established Transition Program. 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 service members, see the chapter on Quality of Life.

Equal Opportunity

Equal opportunity is a military necessity. It provides today's all-volunteer force access to the widest possible pool of qualified men and women; it allows the military to train and assign people according to the needs of the Service; and it guarantees service men and women that they will be judged by their performance and will be protected from discrimination and sexual harassment.

Discrimination, sexual harassment, and disparate treatment jeopardize combat readiness by weakening interpersonal bonds, fomenting distrust, eroding unit cohesion, and threatening good order and discipline. An organizational climate poisoned by bias sets member against member and undermines institutional allegiance. Quality of life in the armed forces is supported by comprehensive and reliable systems for addressing human relations issues and for investigating and resolving discrimination complaints. Such systems provide a visible symbol of organizational commitment to equality and fair treatment, education and training, counseling support, and assistance to complainants when equal opportunity violations occur.

Department of Defense policy clearly proscribes discrimination and sexual harassment. DoD strives to ensure it is an organization where every individual is able to contribute to his or her fullest potential in an atmosphere of respect and dignity. Furthermore, the Department, of necessity, is building a force which reflects the diversity of the nation.

In May 1995, the Department transmitted to Congress the report of the Defense Equal Opportunity Council Task Force on Discrimination and Sexual Harassment. The report contained 48 recommendations for improvements in the Services' discrimination and sexual harassment prevention programs, including the establishment of Department-wide standards for discrimination complaints processing. In August 1995, publication of DoD Directive 1350.2, Department of Defense Military Equal Opportunity Program, implemented the report's recommendations.

The Department of Defense has carefully monitored the effects of the downsizing on minorities; in fact, 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 the improvements implemented to help ensure the fair and prompt resolution of identified transgressions.

IMPROVING FORCE MANAGEMENT

Future Officer Management

The Defense Officer Personnel Management Act (DOPMA) is the cornerstone of the Department's officer management system, and has served the Department, Services, and individual officers well for the past 15 years. Further, DOPMA, along with other special programs provided by Congress, gave the Department the flexibility to manage the drawdown of the officer force in a humane way, treating officers right, while maintaining readiness. Nonetheless, given the evolving force structure, changing roles and missions, and the substantially smaller size of the officer corps, the Department is reevaluating DOPMA and other elements of officer personnel management to ensure their viability into the 21st century. This is a long-term effort that will look at all elements of the officer life cycle from accession, through training, utilization, and promotion, to separation or retirement.

Improving Compensation

The law requires the President to conduct a complete review of the principles and concepts of the compensation systems for members of the uniformed services every four years. President Clinton signed a charter for the Eighth Quadrennial Review of Military Compensation (QRMC) in January 1995. Previous QRMCs focused on the existing system and how to improve its effectiveness; the Eighth QRMC is focusing on how to employ the military human resource management system strategically. The charter requires the Eighth QRMC to look well into the future and to develop a military compensation system that will attract, retain, and motivate the diverse work force of the 21st century. The Review is:

- Conducting a comprehensive review of current compensation and human resource management theory/practice.
- Evaluating the evolving characteristics of the military and the environment impacting it; setting forth a framework for military compensation in the 21st century.
- Identifying new and emerging approaches to compensation and assessing their implications for the military.
- Designing components of a future compensation system; suggesting how the human resource management system can be employed strategically to accomplish organizational objectives; proposing implementation strategy.
- Establishing DoD as a leader in attracting, retaining, and motivating the diverse work force of the 21st century.

The Eighth QRMC is expected to complete its work in June 1996.

Status of Women in the Military

DACOWITS

Establishment of the Defense Advisory Committee on Women in the Services (DACOWITS) in 1951 was a major milestone for military women. DACOWITS is a civilian federal advisory committee of prominent citizens from across the nation, representing industry, education, and civic affairs. The committee serves to promote public acceptance of military service as a career field for women, and to advise the Secretary of Defense on policies relating to the utilization of women. DACOWITS has been particularly effective in improving opportunities and benefits for military women. In 1995, the DACOWITS Executive Committee visited the military in the Pacific, including Hawaii, Alaska, Korea, and Japan. The committee's trip was characterized by many of the installation commanders as one of the most successful in memory. The key to this success was the positive partnership formed between military leaders and the committee members. The committee conducted interviews with over 3,000 service women and men and included this feedback in their report to the Secretary of Defense.

NEW ROLES FOR SERVICE WOMEN

During the past two years, the Department of Defense has made major progress in removing impediments to the recruitment, training, and use of its service members. The Department's policy on the assignment of women has proceeded in three phases -- first with a focus on aviation, then on assignment to naval combatants and, finally, on ground assignments.

In April 1993, then-Secretary of Defense Les Aspin directed the Services to open up additional occupational specialties and assignments to women. In particular, women began to compete for assignments in aircraft that engage in combat. Secretary Aspin also directed the Secretary of the Navy to open more assignments for women on noncombatant vessels and to develop legislation to repeal the naval

combatant exclusion law. One important qualification in the implementing memorandum was that women were not to be assigned to units that engage in direct combat on the ground. During this phase, nearly 42,000 new positions could be filled by either men or women.

Congress made the second phase possible in November 1993, when it repealed the naval combatant exclusion law. That change opened more than 136,000 new positions in the Navy to women. The November 1993 law also prohibited opening additional combat positions to women without congressional review.

The third phase began with Secretary Aspin's January 1994 policy memorandum which revoked the DoD Risk Rule and promulgated a definition of direct ground combat and an associated assignment rule. On July 28, 1994, Congress was notified that the DoD Risk Rule would be rescinded and the Services would open additional combat positions and career fields to women effective October 1, 1994. This guidance established the framework for the utilization of women under which the Department now operates. As a result of these initiatives, more than 80,000 new positions opened to women in the Army and Marine Corps, with the most prominent constraint on the assignment of women remaining in the area of direct ground combat. Under the current policy, women are eligible to be assigned to all positions for which they are qualified, except they shall be excluded from assignment to units below the brigade level whose primary mission is to engage in direct combat on the ground. Generally speaking, this means that armor, infantry, ranger, special forces, and field artillery battalions remain closed to women in the Army. In the Marine Corps, the infantry regiment and artillery, as well as tracked vehicle and combat engineer battalions, with their associated elements, remain closed to women.

As a result of the Department's actions since April 1993, women are now eligible to be assigned to some 260,000 additional military positions. About 80 percent of the jobs and more than 90 percent of the career fields in the armed forces can now be filled by the best qualified and available person, man or woman. This represents a major increase in the flexibility of the Services to maintain a high state of readiness. Reports from the field and fleet indicate that service women are carrying out their new roles with the same excellence and professionalism that has always characterized the performance of members of the United States armed forces.

HEALTH CARE

A crucial part of the nonpay benefits package and a key element of military quality of life is health care. The Department of Defense has a dual health care mission -- first, to ensure medical readiness, which includes both the health and vitality of service members and the capability to provide health care during military operations, to include the effective management of evacuation policy, and second, to provide care to members of the armed services and their families, retirees, and others entitled or eligible for DoD health care.

The military's health care mission is both vast and complex. There are 8.3 million beneficiaries eligible to receive health care from the Military Health Services System (MHSS). Direct care is delivered worldwide in 120 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 through managed care support contracts implemented under the TRICARE program. Substantial resources are required to accomplish the DoD medical mission. The medical portion of the DoD FY 1996 appropriation is approximately $15.6 billion, or 6.3 percent of the entire defense budget.

Health Care Initiatives

TRICARE

During the past year, the Department began implementing the new managed health care initiative under the TRICARE program. This initiative is a regional, managed care program for members of the

uniformed services and their families, survivors, and retired members and their families. It brings together the health care delivery systems of each of the Services and CHAMPUS in a cooperative and supportive effort to provide quality uniform health care benefits. It offers stable, comprehensive health care coverage, quality care, and improved beneficiary access to a variety of health care options while containing overall DoD health care costs.

Under TRICARE, eligible beneficiaries will have three choices for their health care delivery: (1) TRICARE Prime is an enrolled health maintenance organization option; (2) TRICARE Extra offers a preferred provider option with discounts; and (3) TRICARE Standard is a fee-for-service option which is the same as standard CHAMPUS. All active duty members will be enrolled in TRICARE Prime. All CHAMPUS eligible beneficiaries may choose among the three TRICARE options while Medicare eligible beneficiaries remain eligible for care in military medical treatment facilities on a space-available basis. Provider education and beneficiary marketing programs are an integral part of the regional TRICARE program.

The dramatic reduction of the U.S. military presence in Europe has required better systematic integration of health care planning and delivery among the Services. The Department, the Services, and personnel in Europe are all actively working to develop a comprehensive regional health care plan for all DoD beneficiaries residing in Europe. Many of the initiatives being developed in Europe also have merit for consideration in other overseas areas with sizable military populations, most notably in the Pacific.

OVERSEAS FAMILY MEMBER DENTAL CARE

The Department initiated an aggressive program to improve access to dental care for family members residing outside the United States. The Overseas Family Member Dental Program is a comprehensive, integrated plan tailored to each location and is an integral part of the TRICARE Europe Regional Health Plan. A sizable increase in dental resources has begun and will result in increasing access for family members. Phased implementation of the Overseas Family Member Dental Program has begun in Germany and northern Italy. Full worldwide implementation is planned for FY 1996. This initiative is already considered one of the single greatest quality of life improvements for family members overseas.

MEDICAL CARE FOR BENEFICIARIES IN BRAC AREAS

The approved BRAC lists (1988, 1991, 1993, and 1995) will result in the closure of 31 military hospitals and an additional number of health clinics in the continental United States. With strong congressional support for the Department to do more for beneficiary populations affected by base closures, planning and programs were enhanced to specifically address their needs. DoD eligible beneficiaries remaining in areas affected by BRAC actions will be provided with alternative health care delivery options after their local military treatment facility closes. The Department's actions to lessen the medical impact include transition health care programs, managed care initiatives, retail pharmacy networks, a mail service pharmacy demonstration, and meetings with beneficiaries at affected BRAC sites.

JOINT EFFORTS WITH THE DEPARTMENT OF VETERANS AFFAIRS

Within the past year, a very constructive relationship on health issues has evolved between the Assistant Secretary of Defense for Health Affairs and the Department of Veterans Affairs (VA) Under Secretary for Health. Last year, DoD and VA worked closely together to allow VA hospitals to participate in the TRICARE program. These efforts culminated in a memorandum of understanding that enables VA hospitals to become a part of the provider network under TRICARE. Further, the two agencies have laid out and committed themselves to a number of priority and mutually beneficial program areas.

GULF WAR VETERANS HEALTH ISSUES

The Department is strongly committed to dealing with the issue of potential adverse health effects that may have resulted from service during Operations Desert Shield and Desert Storm. To investigate the nature of their illnesses, DoD and the Department of Veterans Affairs each developed programs to

provide medical examinations to Gulf War veterans. Established in June 1994, DoD's Comprehensive Clinical Evaluation Program (CCEP) provides in-depth medical evaluation for DoD beneficiaries who are experiencing illnesses which may be related to their service in the Persian Gulf. Spouses and children of Gulf War veterans may participate in the CCEP if they are eligible for DoD health care. As of early December 1995, there were 27,575 participants in the program, of which 20,796 had requested an examination and over 18,924 had finished the evaluation process. A report on 10,020 participants was completed and released in August 1995. Based on the experience at that time, the CCEP found no clinical evidence for a new syndrome or unique illness among Gulf War veterans. These results are consistent with conclusions of a National Institutes of Health Technology Assessment Workshop.

Programs were also developed at military Specialized Care Centers focusing on rehabilitation, restoration of function, and promotion of well-being. Ongoing related research efforts include reproductive health research, leishmaniasis (type of parasite) research, research on the effects of exposure to depleted uranium, and the possible effects of certain chemical compounds encountered in the Gulf War. The Department also launched an investigation team to look into incidents and exposure that might be related to illnesses experienced by Gulf War veterans.

TELEMEDICINE

Telemedicine uses high tech communications to allow doctors and other health care professionals to help patients in distant locations. Rapid advances in communications and related technologies continue to expand the usefulness of telemedicine. The Department is developing strategies to fully exploit the potential for telemedicine and move telemedicine and other new technologies into the mainstream of the military health care system. Today's provisional telemedicine links between deployed U.S. forces and military hospitals in the United States support diagnostic consultation and long-distance medical mentoring. In the future, DoD expects to save casualties who would have been among the killed in action in previous wars by projecting expert medical care forward on the battlefield.

Applications for telemedicine include trauma care, radiology, dentistry, pathology, surgery, dermatology, patient evacuation, infectious disease surveillance, and support of epidemiological field investigations. These technologies are expected to become much more widely applied in both military and civilian health care delivery, medical training and education, and medical research.

GLOBAL SURVEILLANCE SYSTEM

DoD has a strong national security interest in medical intelligence and global epidemiology. With an increase in the number of infectious diseases (both old and emerging), the Department believes a Global Surveillance System, which would identify and characterize infectious diseases and aid in their containment, will have great benefits for the international community, the U.S. population vulnerable to such diseases, and U.S. troops deployed outside the United States. The Assistant Secretary of Defense for Health Affairs, in conjunction with the Departments of State and Health and Human Services, the Agency for International Development, and other agencies, is working to develop and promote a vision for this system which would cover all geographic areas, coordinate with all participating nations and nongovernmental organizations, provide timely reporting, be capable of international rapid response to outbreaks, train infectious disease staff, expand research on disease diagnosis, prevention and control, and provide international data system and communications support.

Military Health Care Advisory Committee

This Committee, which includes members designated from outside DoD, functions as an external advisory body for developing MHSS policy and strategy. It advises the Secretary of Defense, the Deputy Secretary of Defense, the Under Secretary of Defense for Personnel and Readiness, the Assistant Secretary of Defense for Health Affairs, and the military departments on matters relating to military health care and other health related matters that are of special interest to the DoD. Facing important challenges, the Department is developing a strategic vision focusing on future-oriented solutions which

consider the rapid changes occurring in the world. The goal is to improve the quality and efficiency of the military health services system and provide access to excellent medical services for all those entitled to DoD health care.

THE CIVILIAN WORKFORCE

Civilian Downsizing and Transition Assistance

Reducing the workforce while minimizing the impact on civilian employees has been one of the most difficult tasks facing the Department of Defense in recent years. DoD was largely successful in this effort through the innovative use of special personnel programs and incentives. To date, DoD has accounted for the overwhelming majority of cuts in the efforts to downsize the federal government. Since October 1989, DoD has reduced civilian employment by over 269,000. By September 1999, an additional 90,000 positions will be eliminated, with further reductions anticipated.

To achieve the necessary reductions with minimum workforce turbulence, DoD developed the Civilian Assistance and Re-Employment (CARE) Program in FY 1993. CARE capitalized on the existing Department of Defense Priority Placement Program (PPP); combined and enhanced reduction and transition assistance programs into one division; and sought flexibility from other federal agencies and Congress.

- Since October 1992, DoD civilian strength has declined by almost 158,000, with fewer than 13,000 involuntary separations.
- In that same time, the Department has reabsorbed over 28,000 employees through PPP.
- Through operations of the Defense Outplacement and Referral System, about 1,300 employees have gone to other federal employers and many more have been hired by private and public employers.
- Since October 1992, the Department has paid close to 73,000 incentives to employees in targeted occupations and grades, thereby avoiding a like number of layoffs.

The Department's combined use of hiring constraints, Voluntary Early Retirement Authority, training initiatives, and the approaches mentioned above has resulted in minimal involuntary separations. DoD is now adding the Non-Federal Hiring Incentive, which Congress authorized in the FY 1995 National Defense Authorization Act, at all closing bases. This incentive will encourage private and public employers to hire DoD workers who are facing separation by providing payments of up to $10,000 per worker for retraining and relocation.

Civilian Training and Education

The Department is looking at more effective and cost-efficient ways to train, educate, and develop civilian employees. Last year, DoD launched an effort to develop a framework for civilian leader development that would provide a universal, comprehensive, and systematic program to enhance support of the changing national security objectives. The framework, called Growing the Gold, is built on the professional military education (PME) model. PME provides a sequential and progressive program of leadership education in basic, intermediate, and senior Service schools, as well as the National Defense University. The draft program seeks to increase civilian participation in those schools and to identify comparable opportunities. In a related effort, the Department is investigating the possibility of exporting to other critical functions the approach to career management used by the acquisition workforce. That approach calls for certification of employees based upon prescribed training, education, and assignments. These initiatives respond to the President's call for greater and smarter investment in human capital.

Defense Partnership Council

Chartered in June 1994, the Defense Partnership Council (DPC) is composed of senior management officials from the Department, the Services, and key leaders from several major unions. The union officials who are part of the DPC represent approximately 1,700 bargaining units located throughout the world. The DPC has taken important steps in the process of transforming labor-management relations from the traditional adversarial mode to a cooperative model based on partnership and mutual respect. The Department has trained more than 23,000 management officials, union representatives, and employees in some aspect of partnership. In addition, the Office of the Assistant Secretary of Defense for Force Management Policy sponsored training for more than 500 managers and union officials; this training was jointly developed by DoD, several major unions, the Federal Labor Relations Authority, and the Federal Mediation and Conciliation Service.

The DPC is forging a more constructive relationship between labor and management by bringing together key officials with the ability to shape the labor-management climate in the Department. By discussing substantive issues face-to-face, the DPC members are breaking down old barriers of suspicion and mistrust. The partnership process highlights the many common interests shared by DoD organizations and DoD unions. In fact, projects initiated by the DPC were instrumental in fostering local labor-management relationships focused on supporting and enhancing DoD's national security mission and creating and maintaining high-performance workplaces that deliver the highest quality products and services to the American public at the lowest possible cost.

Civilian Personnel Regionalization and Systems Modernization

The Department is moving forward with its restructuring plan to regionalize civilian personnel services and develop a modern information system to support civilian personnel operations. With input from the military departments and defense agencies, the Department developed a regional service delivery model based on a number of successful prototypes implemented since 1986. The regionalization effort capitalizes on economies of scale by consolidating selected civilian personnel operations into Regional Service Centers and small Customer Support Units. Administrative processing operations and program management activities will be concentrated at the Regional Service Centers, while personnel operations requiring face-to-face customer interaction will remain at Customer Support Units.

Concurrent with regionalization, the Department is building on previous Corporate Information Management (CIM) efforts to modernize its civilian personnel data system. This modern approach will support regionalization with open systems-compliant hardware and software platforms and standard communications protocols over the Defense Information System Network. It will provide managers easy access to the data system through graphical user interfaces and implement other technological improvements. To reduce development time and resources and implement private sector best practices wherever possible, the Department has purchased a commercial off-the-shelf (COTS) human resource information system as the basis for the modern data system.

The Department's goal is to improve service quality while reducing resources. The current ratio of civilian personnel employees to employees serviced will greatly improve when the modernization effort reaches full implementation. The resultant resource reductions will meet or exceed the Department's National Performance Review streamlining targets. Economic analyses confirm that with proper investment, regionalization, and systems modernization are achievable and cost effective, and the benefits after full implementation will be substantial.

Consolidated Advisory Services to the Field

Field Advisory Service (FAS), a DoD program in the Defense Civilian Personnel Management Service, is the principal source of technical advice and guidance to defense organizations worldwide on civilian personnel management issues and questions. FAS provides interpretive advice on statute, regulation,

policy, case law, and Comptroller General decisions in areas of benefits, entitlements, compensation, travel, classification, and labor relations. This DoD program provides service to 14,000 civilian personnel specialists worldwide, who in turn provide service to 848,000 DoD employees.

Establishing this program eliminated two layers of human resources management. At the same time, the number of personnel positions providing this support was reduced by 28 percent. Even as the Department saved money, though, it also improved service. Indeed, the Field Advisory Service has been able to answer 86 percent of the inquiries within one work day and 94 percent of the questions within three work days. The remaining questions required answers from sources outside the Department and they were tracked to ensure prompt response was provided to the field.

The FAS staff is comprised of a cadre of experts whose primary responsibility is to support the operating level personnel specialist. Guidance takes the form of reference guides and alerts which are available on a 24-hour basis through an automated fax-back system. The support is enhanced through regular issuance of a newsletter, 12-hour per day live-support, and 24-hour electronic access. In addition, use of modern technology (i.e., the Internet) keeps human resource specialists in the field up to date on issues affecting their functional areas. The Field Advisory Service program also serves as a direct conduit from the field personnel offices to the policy makers within DoD so concerns in the field can get a quick and serious hearing at the top levels. For example, a proposal to change the law providing in-lieu-of holidays for employees on compressed work schedules was written in direct response to concerns raised by the field.

CONCLUSION

The Department's primary personnel mission is to attract, develop, and retain the high quality service men and women and civilian employees who are essential to maintain a high state of warfighting readiness and to treat service members and civilian employees fairly. Service members of all grades will continue to receive high quality realistic training, exceptional educational opportunities, genuine equal opportunity, challenging worldwide assignments, and excellent advancement and leadership opportunities. The Department will continue to recruit the high quality personnel necessary to keep U.S. forces ready and to maintain the proper mix of junior, mid-career, and senior service members. In short, DoD will ensure the United States' armed forces remain the best in the world.

Chapter 13

FINANCIAL MANAGEMENT REFORM

INTRODUCTION

In the early 1990s, then-Secretary of Defense Cheney and Deputy Secretary Atwood initiated several important financial management (FM) improvements. Early in his tenure, Secretary Perry directed a review of these initiatives and made major adjustments to increase their likelihood of success. More importantly, DoD leaders also concluded that the Department's financial management deficiencies were more fundamental and entrenched than previously recognized. They therefore undertook a comprehensive diagnosis of FM problems and causes, and launched new policies and far-reaching reforms to set things right. As a result, the Department is now embarked upon the most comprehensive reform of FM systems and practices in its history.

Planned reforms aim to streamline and redesign DoD financial processes and organizations in order to make them optimally effective and to cut costs. Reforms also seek to ensure that the Department's financial management fulfills the needs of its leaders, meets statutory requirements, maximizes efficiency, minimizes fraud, and provides superlative customer service.

PROBLEMS AND CAUSES

Since its formation in 1947, the Department of Defense has had a decentralized mode of operations. Reflecting that reality, the three military departments and the major DoD agencies have, until recent reforms began, always managed their own budget, finance, and accounting systems. They developed their own processes and business practices, geared to their particular mission and with little need to achieve compatibility with other DoD operations. As defense missions became more complicated and DoD organizations were required to interact more with each other, systems incompatibility and lack of standardization took a toll. Rather than redesigning its organization or standardizing its multitude of systems, the Department developed increasingly complex business practices to link its systems.

Illustrative of this situation, it traditionally has taken up to a hundred paper transactions among as many as a dozen DoD organizations to make a progress payment toward the acquisition of a complex weapon system. Moreover, after the payment has been made, the final accounting for that payment typically has required considerable time and effort to complete -- resulting in the accumulation of problem disbursements.

Such complexity left DoD financial systems prone to error or to demands that could not be met with the systems, personnel, or time available. No matter how good the people operating the systems, problems were inevitable. Moreover, there was an inherent inefficiency in having scores of incompatible organizations performing virtually identical functions. For example, there was only one pay schedule for military people and one for DoD civilians, yet DoD maintained dozens of different pay systems.

REFORM INITIATIVES AND PROGRESS TO DATE

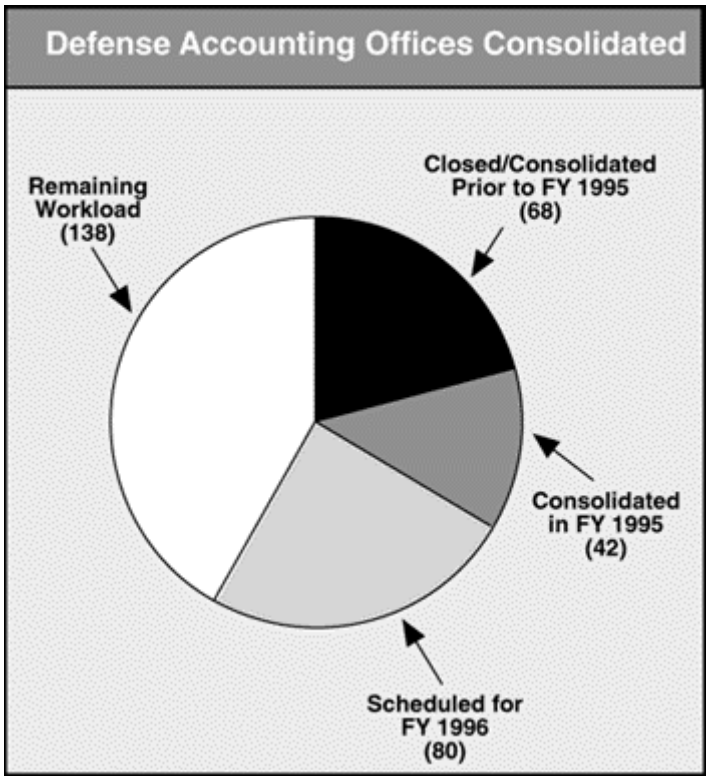
Highlighted below are the major Defense initiatives for FM reform:

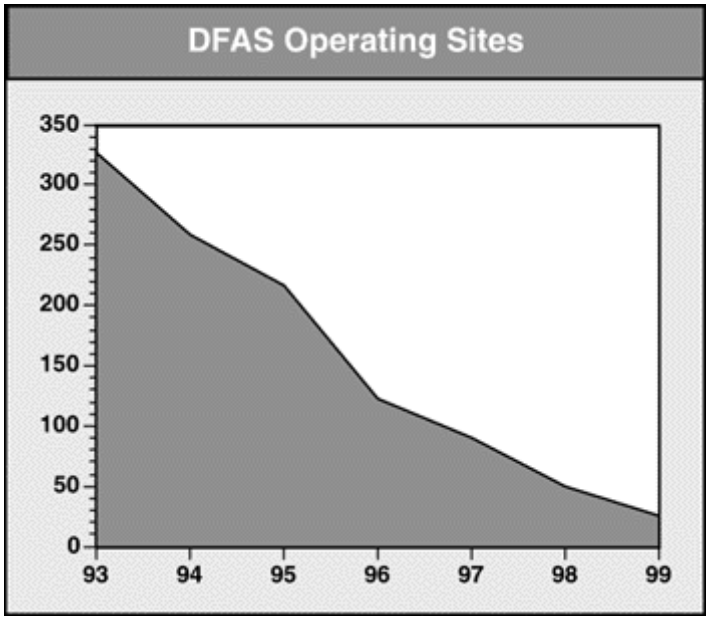
DFAS and the Consolidation of Financial Management Operations

Since its activation in January 1991, the Defense Finance and Accounting Service (DFAS) has been the Department's pivotal agent for financial management reform and consolidation. Through FY 1995, DFAS achieved budget savings of $314 million.

DoD's FM systems are of two types: (1) finance systems for processing payments to DoD personnel/ organizations and to private contractors; and (2) accounting systems for recording, accumulating, reporting, and analyzing of financial activity -- to include revenues and other receipts. Before DFAS was established, the Department had some 250 of these finance and accounting systems.

Before consolidation began, the Department's many FM systems operated from over 300 field activities or sites. DFAS is now streamlining these down to five DFAS Centers and no more than 21 Operating Locations. As the following two charts illustrate as of October 1995, 110 FM activities had been closed or consolidated. Another 80 are scheduled for FY 1996, and all remaining streamlining will be completed by FY 1999.





This consolidation of operations, along with the consolidation of finance systems detailed on the following page, will eliminate redundancy and unnecessary management layers, facilitate standardization, improve and speed up operations and service to customers, increase work force productivity, facilitate expanded use of innovative technology, and enhance the financial management support of DoD decision makers.

In its financial management reform, the Department is reaching beyond its organizational confines to find the best way of doing business. For example, DFAS has initiated DoD-private sector cost comparisons in the functional areas of logistics and administrative support of its facilities, debt and claims management, and vendor pay in support of the Defense Commissary Agency. The objective is to determine how best to provide the most cost-effective FM services. For some functions, that may mean contracting out to the private sector. For example, in two business areas -- printing/ publications and base support for the Navy -- DoD plans to switch to commercial off-the-shelf accounting systems.

Consolidation of Finance Systems

As reform is carried out, finance and accounting operations must continue to operate. People must be paid and accounts kept current. Because of these and other considerations, the consolidation of financial management systems is being carried out in stages. The first step is to designate certain existing FM systems as migratory systems, into which all existing systems can be consolidated without serious difficulty. In preparing these designated systems for their expanded role, the Department adapts the best features of existing systems, corrects reasonably correctable deficiencies, improves processing and reporting capabilities as much as possible, and seeks cost savings.

The next step is to develop optimum follow-on systems, drawing on lessons from the migratory systems and taking full advantage of the latest technology. The transition to these optimum systems will be at a pace determined by the money and technologies available for such a transition, and other circumstances.

The consolidation of DoD finance systems is well underway, with the implementation of five migratory finance systems proceeding rapidly:

- By 1997, the Defense Civilian Payroll System (DCPS) will be fully implemented, replacing 27 payroll systems. The DCPS will handle the pay of all DoD civilians, now numbering about 830,000. As of September 1995, about half of the DoD civilian work force was under DCPS, and 222 payroll offices had been eliminated.
- By 1999, the Defense Joint Military Pay System (DJMS) will be fully implemented, consolidating the original 22 military pay systems down to two: DJMS for the Army, Navy, and Air Force; and the Marine Corps Total Force System for that service. The DJMS will support the 2.7 million people on active duty and in the reserve components.
- The Defense Transportation Payment System (DTRS) is being implemented to consolidate and standardize all DoD transportation payments. It currently processes payments for the shipment of some household goods and freight. In FY 1996, DFAS will improve the DTRS's use of electronic data exchange, among other aspects. DTRS improvements are expected to save about $21 million per year.
- The Defense Retiree and Annuitant System (DRAS) was fully implemented in FY 1995 and is now managing over 2 million accounts. When DFAS was created, retirees and annuitants were being paid from four sites, using eight systems handling fewer than 2,500 accounts per employee. DoD now has one system operating at just two sites. The DRAS enables DoD to handle 3,400 retired pay accounts or 1,700 annuitant accounts per employee, operate with 242 fewer workers, and save over $10 million annually.
- The Defense Debt Management System became operational in 1993. It standardizes the collection of debts from military and civilian personnel not on active DFAS payroll systems, as well as delinquent contractor payments. It replaced five distinct systems operated by DoD components.

In addition to the above, all contract payments have now been consolidated into one migratory system. Plans are underway for transitioning to a thoroughly revamped new processing system.

Consolidation of Accounting Systems

The Department continues to work hard to eliminate as many as 100 accounting systems. Also as least as important are ongoing improvements to the remaining systems -- to make them more compliant with generally accepted accounting principles and the Chief Financial Officers (CFO) Act. DoD accounting systems also must be capable of providing accurate, timely, and auditable information and support for cost effectiveness.

In the general accounting area, migratory systems have been selected to maintain, without undue disruption, the operations of the three military departments. DoD has already gone from 91 general fund accounting systems in 1991 to 77 in 1995; a further reduction to 53 systems by 1998 is anticipated. These migratory systems are continuously being improved to make them more accurate, timely, and compliant with the CFO Act. DoD is also working to improve greatly the link between accounting systems and the nonfinancial systems that handle logistics, procurement, and contracting. In the functional area of business operations, the Defense Business Operations Fund (DBOF) Corporate Board has approved 18 migratory accounting systems to handle the consolidation of the current 77 systems. These DBOF migratory systems are expected to be operational beginning in February 1998.

Reflecting the complexity of the task, progress on consolidating DoD accounting systems has lagged behind the streamlining of finance systems. For this and other reasons, the Department is exploring more radical alternatives, to include contracting out the accounting function for certain industrial activities.

Reengineering Business Practices

A critical component of DoD's financial management reform is the reengineering of its business practices, i.e., the procedures by which it functions. The goal is to make DoD business practices simpler, more efficient, and less prone to error. Reengineering is being achieved by the revision of existing policies and procedures and the increased standardization, consolidation, and compatibility of existing systems.

In advancing the consolidation of DoD financial operations, DFAS is achieving a significant reengineering of the associated business practices. The organizational structure of DFAS's five centers and 21 Operating Locations is designed to facilitate standardization and streamlining, improve accountability, reduce data incompatibility, and improve customer service. Substantial reengineering also was achieved in the development of the new payroll/payment systems.

Electronic commerce/electronic data interchange (EC/ EDI) technology is a major tool in DoD's reengineering effort to promote the paperless exchange of financial information, thereby saving time and money. DFAS is spearheading the widespread adoption of EC/EDI for DoD financial systems. For example, EDI is currently used to process invoices in the Standard Automated Material Management System. In addition, DoD is implementing EDI for payment notification to vendors and the direct input of data into accounting systems.

During 1995, DFAS reengineered all processes by which the Department garnishes the pay of employees for child support, alimony, commercial debt, and divisions of retired pay. The new processes will be implemented in FY 1996. In October 1995, DFAS completed its consolidation of DoD garnishment operations at its Cleveland Center. In FY 1997 and 1998, DFAS will introduce and integrate EDI, imaging, and artificial intelligence technologies into its reengineered processes. These changes are expected to increase dramatically the efficiency of DoD garnishment operations and reduce their cost significantly.

Travel Reengineering

Another important reengineering effort is simplifying the process for temporary duty (TDY) travel by DoD civilian and military personnel. The goal is to eliminate many of the steps now required to initiate travel, process a voucher, and receive payment. A new paperless system will meet the needs of travelers, support mission requirements, and save as much as $100 million annually. The Department will rely on the private sector for most travel-related services -- except the obligation and approval of funds, final accounting, and random audit.

Features of the reengineered TDY system include:

- Simple policies and entitlements focused on mission requirements and respectful of the integrity of travelers and commanders.
- A single trip document to serve as travel order, voucher, and itinerary record.
- Maximum use of government travel credit cards to eliminate cash advances.
- Exclusive use of commercial travel offices for all travel arrangements and cost estimates.
- Simplified accounting to enable supervisors to track travel budgets.
- Random and exception-based audits vice 100 percent audits.

Standardization of Data

The standardization of financial management data throughout the Department is crucial to reform. It facilitates the consolidation of FM systems, enables the sharing of data and greater compatibility between FM and non-FM systems, and supports the reengineering of business practices. Until recent consolidation

efforts began, DoD finance and accounting systems managed 100,000 data elements. Detailed data modeling has indicated that DoD financial operations eventually could be conducted with fewer than 800 carefully designed standard data elements. As of June 1995, the Department has adopted 540 standard FM data elements; additional elements are likely to be added in the future.

Also supporting reform is an ambitious effort to standardize and share acquisition data. This will greatly improve the interactions between DoD procurement systems and the FM systems that process and account for payments for procurement.

To foster standardization beyond just data, the Department is consolidating financial policy and procedures into a single 15-volume DoD Financial Management Regulation. This will replace a myriad of existing regulations and will clarify and expand upon many FM procedures.

Eliminating Problem Disbursements and Other Internal Control Problems

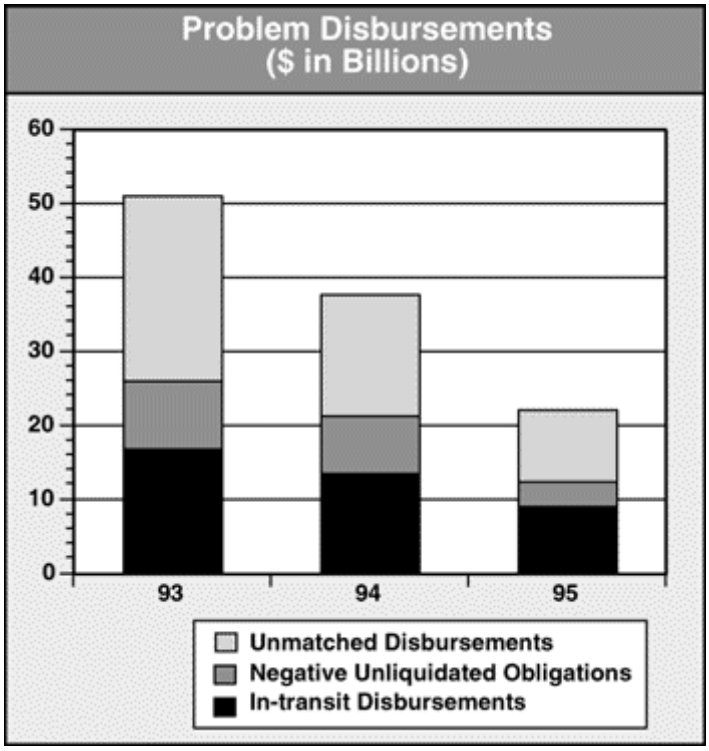
Problem disbursements in DoD financial operations occur when an expenditure has not been reconciled with official accounting records. Such occurrences are the result of a decades-old practice that allowed payments to be made after validation of the receipt of the related goods and services, but before ensuring there was a clear path back to the appropriate accounting entry. This practice is being phased out as quickly as possible, and DoD has been working hard to resolve problem disbursements that have accumulated because of it.

DoD has made substantial progress in reducing three types of problem disbursements:

- Disbursements that have not been matched to an obligation (unmatched disbursements).
- Disbursements that exceed the obligations to which they have been matched (negative unliquidated obligations).
- Disbursements still being processed (in-transit disbursements).

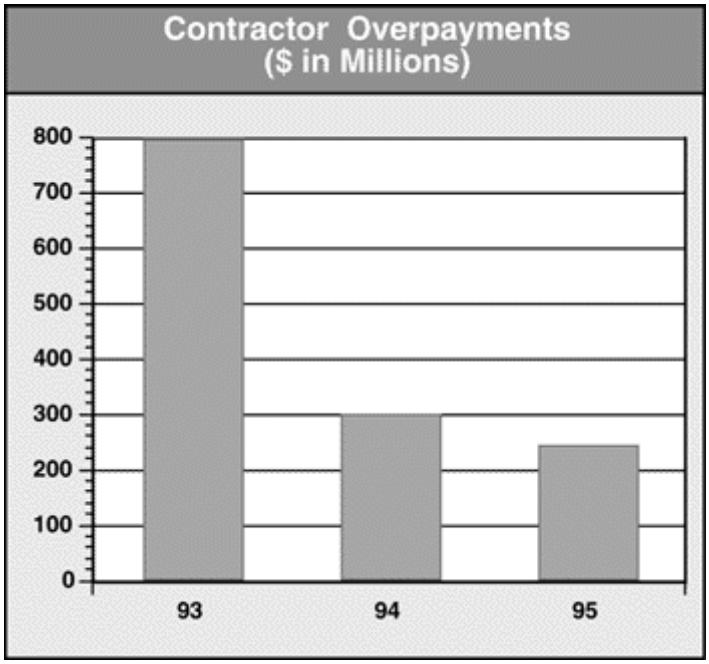
By June 1993, when it increased efforts to solve this situation, the Department had accumulated a total of $51.1 billion in problem disbursements. By November 1995, the backlog had been reduced to $22.0 billion. These remaining problem disbursements are concentrated in Navy accounts and reflect the greater complexity of supporting deployed naval forces worldwide. The Department expects to hold the line on all problem disbursements for the Army, Air Force, Marine Corps, and defense agencies, and to cut Navy ones in half by January 1997.

While DoD's problem disbursements have been a serious failure needing remedy, there is no basis for concluding that the expenditures involved were wasted. Each expenditure was made only after a Department official confirmed receipt of the subject goods or services and ensured that the payment was made in accordance with a valid contract. That safeguard has been scrupulously followed. The failure was not having these valid and proper disbursements reconciled with accounting records in a timely manner.



To prevent future problem disbursements, the Department is working toward requiring that every disbursement be matched to an obligation before payment is made. In July 1995, DoD began requiring that all payments of $5 million or more be prevalidated before they are made. In October 1995, prevalidation began for payments of $1 million for many of the payment and accounting systems.

Overpayments to DoD contractors constitute another area receiving intense management attention. The chart below shows DoD's dramatic reductions to the scope of the problem. While contractor overpayments must not and will not be tolerated, it is important to put them in proper perspective. DFAS's Columbus Center processes contractor payments totaling $90 billion annually, or about $35 million in disbursements per hour. Of this total, contractor overpayments amount to about 0.3 of 1 percent. In other words, DoD is about 99.7 percent accurate. However, that is not good enough, and the Department is working hard to improve this record.



The Department also has taken bold action to correct and prevent Antideficiency Act violations. During FY 1995, the Department completed over two-thirds of the 94 antideficiency investigations underway at the start of the year. To prevent violations, DoD components have strengthened their internal controls and their training aimed at avoiding and detecting antideficiency problems. DoD also is developing new computer-based training about fiscal law and the prevention of Antideficiency Act violations. Of further assistance are major efforts to ensure DoD compliance with the Federal Managers Financial Integrity Act (FMFIA).

Computer Security and Fraud Detection

In June 1994, the Department established Operation Mongoose to detect fraud and reduce the vulnerability of its computer networks to intrusion. The program is jointly sponsored by the Under Secretary of Defense (Comptroller), DFAS, Defense Manpower Data Center, Assistant Secretary of Defense for Reserve Affairs, and the DoD Inspector General. Data matches from multiple sources are used to identify potentially fraudulent payments to individuals or contractors. Payments can be monitored and validated from the civilian, military, retired and annuitant, vendor, and transportation pay systems. Besides data matches, Operation Mongoose uses face-to-face interviews to verify retiree/ annuitant claims. Past incidences of fraud generally were made possible by deficiencies in DoD FM systems and inadequate internal controls. Therefore, fraud investigations have been used to identify and change practices that permitted the wrongdoing.

While Operation Mongoose is designed to detect potential cases of fraud or abuse in the tens of millions of financial transactions undertaken every year, it also has a more important purpose -- to identify potential weaknesses in the underlying controls to make it much harder for would-be culprits to abuse the system.

Management Incentives

A fundamental aim of DoD reform is to more effectively use financial controls to support desirable management incentives. For example, a key goal of the DBOF initiative has been to guide management

decisions toward genuine cost consciousness by prescribing that all relevant data be included in the costs affecting those decisions. To encourage greater cost effectiveness, the Department is devising ways to track budget expenditures relative to their associated outcomes, as required by the Chief Financial Officers Act and the Government Performance and Results Act.

CONCLUSION

Financial management in the Department of Defense is a work in progress. There have been notable successes, but progress is slow in some areas. It is impossible to reverse decades-old problems overnight, and some reforms will require several years of transition, experimentation, reengineering, and modernization.

In moving ahead, DoD financial management reform must accommodate two unavoidable constraints. First, the Department cannot stop its financial operations while it fixes outdated business practices and flawed systems. Every day, the Department must manage payrolls, process payments, and produce financial reports. These daily operating requirements impose a strong practical test on all plans for changing systems and business practices.

A second constraint is that lasting reform demands consensus and collaboration. Few solutions rest exclusively within the jurisdiction of the financial management community. Reform of DoD financial management invariably entails changes in the business practices of other defense organizations and functional groups -- like the acquisition or logistics communities. This demands an unusual degree of consensus building and collaboration, which slows the pace of change. But there are no viable shortcuts. Pressing ahead without consensus and collaboration will not produce lasting reform.

DoD's current leadership is committed to making financial management reform a hallmark of its stewardship. Progress to date has been substantial, and the Department is determined to complete this historically significant challenge.

Chapter 14

ACQUISITION REFORM

INTRODUCTION

The Deputy Under Secretary of Defense for Acquisition Reform, in coordination with the Office of the Secretary of Defense (OSD), Joint staffs, military departments, and defense agencies, continues DoD's efforts to fulfill the Defense Acquisition Reform vision -- ÒThat DoD will become the world's Smartest (use of best practices), Most Responsive Buyer (timely and flexible) of Best Value Goods and Services that meet our Warfighters' needs." The efforts outlined here are summaries of the major initiatives ongoing at the DoD level. There are numerous other efforts in the military departments and defense agencies, all the way down to individual program offices, purchasing activities, and contract administration and auditing offices. Collectively, the Department of Defense is striving to achieve its acquisition reform goals in support of the Department's efforts to enhance defense management.

Not only is the Department working for greater efficiency in the actual process of acquiring equipment and services, it is also striving to reduce costs through an initiative known as cost as an independent variable. Cost as an independent variable means that once the system performance and target cost are decided (on the basis of cost-performance tradeoffs) the acquisition process will make cost more a constraint, and less a variable, while nonetheless obtaining the needed military capability of the system.

In addition to DoD efforts, the Department continues to work with other government agencies and Congress to bring about acquisition reform on a national level. The Department is very proud of those DoD personnel leading and working on federal level teams, such as those implementing the Federal Acquisition Streamlining Act of 1994 (FASA), Public Law 103-355, and those individuals working with other federal agencies and Congress on new acquisition reform legislation.

ACQUISITION REFORM LEGISLATION

DoD participated as a member of the government-wide team to help bring about the Federal Acquisition Streamlining Act of 1994, historic legislation substantially overhauling federal procurement law. The Department continues to participate as it leads in implementing the Act in the Federal Acquisition Regulation (FAR), the Defense Federal Acquisition Regulation Supplement (DFARS), and other key defense acquisition-related regulations, instructions, and policy memoranda. The Program Manager for FASA, from the Office of the Deputy Under Secretary of Defense for Acquisition Reform, led the effort involving 11 teams of federal employees, who wrote the rules to implement sections of FASA in the FAR. Nine of the 11 team leaders were from DoD, as were many of the team members. FASA implementation used an integrated product team approach with interagency membership, and was substantially completed in the FAR by September 1995.

As a follow-on to the successful legislative efforts of 1994, DoD again participated in an Administration-wide effort to produce additional needed acquisition statutory reform proposals, particularly in areas not significantly affected by the 1994 legislation. The Administration's 1995 legislation efforts focused on two critical areas, bid protest reform and competition streamlining. These, along with reform of information technology (IT) management and acquisition, and procurement integrity rationalization, are among the resulting significant reforms contained in the FY 1996 National Defense Authorization Act (P.L. 104-106).

A major issue to the Administration, including DoD, is reducing the number of bid protests, which is highly disruptive to the procurement process. It takes approximately 30-40 percent longer to award a protested contract than a contract that is not protested. Almost 40 percent of the government's information technology contracts over $25 million are protested, creating a significant negative impact on the procurement process. The Administration's protest reform proposals are intended to improve the efficiency and timeliness of the acquisition process and significantly reduce the number of protests filed, while continuing to safeguard the interests of those unfairly treated in the acquisition process. Establishing a uniform scope and standard of review in all judicial and administrative protest fora is the single most important proposal in the protest area. The FY 1996 National Defense Authorization Act essentially accomplished this goal by repealing the litigation-intensive IT bid protest jurisdiction of the General Services Board of Contract Appeals.

DoD recognizes that government can no longer afford the administrative burden to meet the requirement that every potential government source must be allowed to compete, even when all of those sources do not have a realistic chance of receiving the government contract. As budgets face greater decline, some tradeoff must be permitted between allowing every potential offeror to compete and requiring only a number sufficient to ensure competition and efficient procurement of high quality goods and services. The Administration has endorsed several legislative proposals to address this issue. For instance, authorizing contracting officers to conduct a competition among those sources initially selected will permit more effective balancing of competition requirements with efficiency in the contracting process. Potential offerors will know earlier in the procurement if they do not have a likely chance for award, saving their time, money, and resources and those of the agencies. In addition, allowing agencies to limit the number of offerors in the competitive range to the number that will allow an efficient competition will enable agencies to expedite the procurement process, and will allow offerors not having a real chance to receive the award to save time and money by being removed sooner in the process. The final provisions of the FY 1996 National Defense Authorization Act authorized agencies to so limit the competitive range.

SIMPLIFIED ACQUISITION THRESHOLD

DoD was a vital part of the Administration team's effort to reform the acquisition system by obtaining legislation in 1994 which created the simplified acquisition threshold at $100,000. This meant that all purchases of a value of $100,000 or less could be accomplished with less regulatory bureaucracy and, in the long run, less cost to the government. The legislation further provided for the use of simplified acquisition procedures for procurements of $50,000 or less for all activities within the federal government and $100,000 or less for activities which are certified Interim Federal Acquisition Computer Network (FACNET) compliant. FACNET is a government-wide computer architecture which will guarantee a single face to industry and allow greater participation in government procurements for all vendors in the industrial base.

A government-wide team, led by DoD, prepared proposed and interim rules. As of February 1996, 206 DoD activities were certified Interim FACNET compliant and could utilize simplified procedures for soliciting and awarding government contracts. However, use of simplified procedures is expected to rapidly expand in 1996 and thereafter, as the FY 1996 National Defense Authorization Act removed the requirement that tied use of simplified procedures to execution of the procurement on FACNET.

COMMERCIAL ITEMS

The Report of the Acquisition Law Advisory Panel to the United States Congress recommended a new statutory regime to acquire commercial items. The enactment of this new regime in FASA and subsequent implementation in the Federal Acquisition Regulation enhanced the Department's ability to acquire

commercial items and components. The FAR implementation team took a clean-slate approach and developed an integrated regulatory approach to contracting for the acquisition of commercial items, with a new Part 10, Market Research; a new Part 11, Describing Agency Needs; and finally, a new Part 12, Acquisition of Commercial Items.

The FY 1996 Defense Authorization Act further simplified commercial item acquisition by authorizing, for a three year period, commercial item buys up to $5 million in contract value to be purchased using greatly simplified procedures. In addition, the Act lifts burdensome cost or pricing data requirement from all competitive commercial item procurements. The government will be able to buy most commercial items just like any other customer, without imposing virtually all government-unique procurement requirements.

DEFENSE ACQUISITION PILOT PROGRAMS

The Under Secretary of Defense for Acquisition and Technology, in a December 15, 1994, memorandum: (1) designated five programs as participants in the Defense Acquisition Pilot Programs, as authorized by FASA; (2) provided each program with FASA commercial item exemptions; and (3) allowed one program, Joint Direct Attack Munition, early use of the statutory relief as implemented in the draft FAR rule on commercial items. The five pilot programs are Fire Support Combined Arms Tactical Trainer, Joint Direct Attack Munition, Joint Primary Aircraft Training System, Commercial Derivative Aircraft (also known as the Non-Developmental Airlift Aircraft), and Commercial Derivative Engine (F-117 Engine). In addition, the Under Secretary provided regulatory relief from FAR, DFARS, and DoD Directive 5000 policy requirements for all five pilot programs, as well as for the Defense Personnel Support Center, Advanced Field Artillery System/Future Armored Resupply Vehicle, Joint Surveillance Target Attack Radar System Ground Station Module, Patriot Advanced Capability-3 Missile, and C-130J program. The pilot programs incorporated statutory and regulatory relief into their solicitations and contracts and reported cost avoidance, reduction of intrusive government oversight in contractor's plants, and reduced documentation requirements. In the Federal Acquisition Reform Act of 1995, DoD was given authority to extend the pilot program concept to cover an entire production facility. DoD is working on implementation of this new authority, including establishing criteria and a process for selecting a pilot plant.

MILITARY SPECIFICATIONS AND STANDARDS

On June 29, 1994, the Secretary of Defense signed ÒSpecifications and Standards -- A New Way of Doing Business," mandating a performance-based solicitation process and the expanded use of nongovernment standards. The Defense Standards Improvement Council was created to carry out those policies. Today:

- Requirements in solicitations are being described in performance terms.
- If military or federal specifications or standards are necessary, waivers must first be obtained.
- Solicitations for new acquisitions that cite military or federal specifications or standards typically also contain language encouraging offerors to propose alternatives.

Since June 1994, DoD has adopted an additional 1,200 nongovernment standards, raising the total number of nongovernment standards adopted by DoD to nearly 7,000. This represents a growth from about 17 percent to nearly 20 percent of the total for all specifications and standards adopted by DoD. Additionally, every military specification and standard is being reviewed to ensure that it supports acquisition reform principles. Industry and private sector organizations are helping DoD decide whether to cancel a military

specification or standard, convert it to a performance-type document, replace it with a nongovernment standard, convert it to a guidance-type document, or retain it.

To date, the Defense Standards Improvement Council has made decisions on the top 107 cost-driver standards. Nearly half have been canceled or declared inactive for new design, 20 percent will be converted to use for guidance only handbooks, and 10 percent are being retained until an adequate nongovernment standard becomes available. The rest will be converted to performance-type documents or retained. The Defense Standards Improvement Council has also decided the disposition of the remaining 1,600 military standards -- the majority of which are scheduled for cancellation, consolidation, conversion to a guidance handbook, or replacement with a nongovernment standard.

The Department is currently reviewing over 28,000 military specifications to determine which can be canceled, inactivated for new design, or replaced with performance specifications or nongovernment standards. Actions to effect the changes mandated by this review will be carried out over the next two years.

ELECTRONIC COMMERCE/ELECTRONIC DATA INTERCHANGE

The Under Secretary of Defense for Acquisition and Technology directed the Deputy Under Secretary of Defense for Acquisition Reform to execute the DoD Electronic Commerce/Electronic Data Interchange (EC/EDI) in Contracting Process Action Team Report recommendations of January 5, 1994. That report sets out a comprehensive plan for implementing EC/EDI throughout DoD. Since that date, the Director, DoD Electronic Commerce, activated 206 of 244 DoD sites and also activated 20 federal contracting sites with EC/EDI enabling technology. The 244 sites accomplish 98 percent of all simplified purchases in DoD. Since activated, the 206 ED/EDI sites have generated a cumu- lative total of 673,242 production transactions, including solicitations, contractor quotations, and purchase orders for critically needed goods and services. Twenty-seven new Value Added Networks now provide essential connectivity for the contractor industrial base. Additionally, the centralized contractor registration feature reduces registration and certification points from 1,400 to 1.

CONTRACT FORMATION AND ADMINISTRATION

In November 1994, the Under Secretary of Defense for Acquisition and Technology chartered a process action team (PAT) to recommend improvements to the defense procurement process. The team, composed of approximately 30 defense acquisition personnel primarily from contracting offices, program offices, and contract administration and audit organizations, made 27 recommendations now being implemented. Their recommendations include proposed changes to statute, procurement regulations, and policies, as well as other recommendations designed to change the culture of contracting organizations. The Office of the Secretary of Defense is evaluating implementation progress.

Also in November 1994, the Under Secretary of Defense for Acquisition and Technology chartered a Contract Administration Reform PAT to develop a comprehensive plan to reengineer specific elements of the DoD contract administration process, utilizing a risk management rather than a risk avoidance approach. The team's vision was a more efficient utilization of declining contract administration resources in order to provide the level of support required by customers of that process. The team, composed of approximately 40 defense acquisition personnel from Defense Contract Management Command and Defense Contract Audit Agency field activities, Military Services and Defense Logistics Agency buying offices, the DoD Inspector General, and the Defense Finance and Accounting Service, made 36 recommendations covering a broad spectrum of contract administration issues. These recommendations

are now being implemented and will have a significant impact on the way DoD will do contract administration in the future. OSD is evaluating implementation progress.

MAJOR SYSTEMS AND TESTING

As a result of the recommendations from a PAT reviewing the oversight and review process for major systems, the Secretary of Defense issued policy direction to use Integrated Product Teams, consisting of all the acquisition process stakeholders, to build more successful acquisition programs developing executable and affordable program strategies and plans, and to identify and resolve problems early. This direction is a fundamental shift in practice from conducting after-the-fact oversight to early insight. The use of Integrated Product Teams is accompanied by eliminating a one-size-fits-all approach to decision documentation. Program Managers now have the flexibility to prepare only those documents required by law and good business practice and pertinent to the required decision.

FASA provided DoD with relief in several major systems areas. The Act repealed competitive prototyping and competitive alternative sources requirements, reducing required documentation and reporting; removed statutory detail from several other required reports; and provided an alternative means of live-fire testing at the component, subsystem, or subassembly level. DoD implemented all of these provisions. The FY 1996 National Defense Authorization Act allows for additional major systems acquisition streamlining procedures and additional pilot programs.

STATUTORY REPORT

Section 5001(b) of FASA included an annual reporting requirement to Congress relating to achievement, on average, of 90 percent of cost, performance, and schedule goals for major and nonmajor programs, and also decreasing, by 50 percent or more, the average period for converting emerging technology into operational capability.

At the law's enactment date, October 13, 1994, the average period for converting emerging technology into operational capability (program initiation to initial operating capability) was 115 months (9.5 years). As of September 30, 1995, the average period declined to 113 months. DoD is taking several actions to further reduce this average period. First, DoD is taking advantage of commercially available technologies by taking advantage of the expanded commercial item definition in FASA to simplify the terms and conditions for acquiring systems, subsystems, assemblies, and components. The Department is also expanding performance specifications use, in lieu of design-specific military specifications and standards. Second, DoD is focusing management attention on cost as an independent variable. Part of this approach is to encourage trades between cost, schedule, and performance at various stages of development. Third, DoD is expanding use of Advanced Concept Technology Demonstrations (ACTDs). ACTDs take full advantage of user and developer integrated product development and prototyping to deliver a capability to the warfighter for operational and doctrinal evaluation prior to committing Department resources to major system development and procurement. Finally, DoD is streamlining its internal acquisition oversight and review procedures and its procurement procedures.

The Department is using Integrated Product Teams to build more successful programs -- shifting from after-the-fact oversight to early and continuous insight. Also, the Department is using EC/EDI to provide information on pending procurements, receive quotes or solicitations, and make awards. These actions will take time to affect the average period of converting technology, but they are beginning to have an affect on cycle time reduction.

As of September 30, 1995, all but four major defense acquisition programs are meeting more than 90 percent of the aggregate number of cost, schedule, and performance goals for that program. The four exceptions are: (1) Comanche, which was restructured and rebaselined in January 1996; (2) Joint Standoff Target Acquisition Radar System Ground Station Module, which was reviewed and rebaselined in November 1995; (3) Maneuver Control System, which was reviewed and rebaselined in December 1995; and (4) Joint Unmanned Aerial Vehicles, which is undergoing a major restructuring.

DEFENSE TRADE AND COOPERATION

The Department, in urging the consolidation of international acquisition laws into a new Title 10 chapter as recommended by the Report of the Acquisition Law Advisory Panel to the United States Congress, proposed three distinct subchapters: (1) Purchase of Foreign Goods; (2) International and Cooperative Agreements; and (3) Acquisition, Cross-Servicing Agreements, and Standardization. Most statutory amendments recommended for subchapters (1) and (3) were enacted as part of the FY 1995 Defense Authorization Act and are being implemented in the DFARS. Congress is currently considering recommendations concerning subchapter (2) and the overarching proposal for consolidation into a new Title 10 chapter.

In addition, the Report of the Acquisition Law Advisory Panel to the United States Congress, recommended adopting a single rule-of-origin based on the Trade Agreements Act. The Department does not have the authority to adopt a single rule-of-origin. Consideration is, however, being given to a waiver of the Buy American Act, which will have a similar, but much more limited, effect.

COST AS AN INDEPENDENT VARIABLE

In the days when the United States had to meet or exceed advanced threat systems or potentially overwhelming quantities of less advanced threat systems fielded by the Soviet Union, the Services put a premium on performance, often at the price of cost and schedule. This emphasis on performance created a culture in which cost and schedule were thought of as dependent variables in the acquisition process; that is, DoD would specify the performance level that a system must meet and then relax cost and schedule constraints to achieve that outcome. Today, threats are not increasing in capability at as fast a rate as in the past, and the DoD acquisition budget is decreasing in response to this changed national security environment. Therefore it is more appropriate to make cost a stronger driver in system design. Such an approach is also more consistent with commercial practices in new systems development, where market forces drive the price at which a new system can be offered.

In 1995, the Under Secretary of Defense for Acquisition and Technology specified that a cost-performance integrated product team would, for each new acquisition system, identify opportunities to achieve cost savings through careful evaluation of a wide range of cost-performance tradeoffs. The Under Secretary has announced a broader policy that incorporates cost-performance tradeoffs, incentives programs for both government and industry, and metrics for implementing cost as an independent variable. Cost as an independent variable means picking the right, affordable cost objective and sticking to it. If warfighter needs cannot be met after exhausting the range of cost-performance tradeoffs available to the warfighter, the milestone decision authority will determine if cost targets should be raised or if the program should be canceled as unaffordable. Cost as an independent variable will work in DoD because it is built on a number of acquisition reform streamlining thrusts such as stating requirements in terms of performance, rather than in detailed, design-specific military specifications; the adoption of commercial practices and the use of commercial products; the shift to an integrated product team management approach; and the adoption of common processes in a facility.

The Department expects that cost as an independent variable will provide quality products that fully meet the warfighter's needs while allowing for substantial reductions in the cost of defense products; more stability for each program; shorter program cycle times; and clearer, innovative design, manufacturing, support, and contracting approaches.

ACQUISITION REFORM COMMUNICATION CENTER

Within the Department of Defense, there are many messages about acquisition reform directed at a variety of audiences. In order to change the behavior in the Department consistent with its vision, mission, and goals, DoD must communicate a common acquisition reform message, ensure consistency of that message, create a synergy in the process of communicating that message, provide a rapid and effective means of communicating the message, and focus the message on learning. The right message must get to the right audience in the right way and at the right time.

To accomplish this objective, the Acquisition Reform Communications Center (ARCC) was formed under the auspices of the Defense Acquisition University. The ARCC provides and disseminates information on acquisition reform and facilitates joint training of acquisition within DoD, the federal government, and industry. It has representatives from each of the Military Services, the Defense Logistics Agency, and industry. Since its inception in 1995, ARCC sponsored three major initiatives. The first were satellite broadcasts that provided the acquisition workforce with timely, up-to-date, detailed information on the changes in their duties and functions brought about by FASA. The second major initiative was the development of detailed acquisition reform training modules (ARTMs) used by the Services in an effort to get in-depth training on FASA an other major acquisition reform issues down to the desktop level. The third initiative was to develop and disseminate to the Services, agencies, and industry an interactive CD training module on Simplified Acquisition Threshold/FACNET.

CONCLUSION

Last year resulted in significant progress towards achieving the Department's Acquisition Reform goals. Consistent with the vision for Acquisition Reform, DoD will continue its efforts across the entire acquisition spectrum, from statutory reform to cultural change, from the beginning of the process -- when a requirement is generated, to the end of the process -- when the contract is closed. This broad, comprehensive approach is necessary if DoD is to achieve true reform in this critical area.

Chapter 16

INSTALLATIONS AND LOGISTICS

INTRODUCTION

In this era of downsizing, privatizing, and restructuring, the Department continues to pursue creative and effective management initiatives to reduce infrastructure costs and optimize logistical support. DoD's overarching goal is to maintain and improve long-term military readiness and to ensure the Department addresses modernization needs. The Commission on the Roles and Missions of the Armed Forces (CORM) emphasized outsourcing the Department's commercial activities as a way to streamline support activities and achieve cost savings. Over the coming months, the Department will investigate outsourcing (using federal funds to pay a private company to do defense work) or privatizing (completely transferring to the private sector) many commercial-type support activities, such as depot maintenance, materiel management, family housing, and base management and infrastructure.

This chapter will specifically address those initiatives and objectives the Department is implementing to improve installations and logistics management, including those related to the CORM recommendations.

INSTALLATIONS

Meeting the Challenge of Installation Readiness

Military readiness and the ability to attract and retain quality personnel depend, to a large degree, on the installations where DoD people work and live. To better match facilities with the emerging force structure, the Department will continue to realign and consolidate functions. To hasten the modernization of facilities, the Department is using new management and financial tools, such as private capital, to leverage limited resources. To enhance the way the Department manages its installations and provides services to its people, the Department is redesigning business practices to improve customer service and lower costs.

The Department's efforts focus on achieving the following four objectives:

- Support military readiness and quality of life with sufficient, high quality facilities at the lowest life-cycle cost.
- Use private capital and commercial construction techniques to help solve the Department's facility deficiencies, with special emphasis on constructing or renovating existing family housing.
- Improve installation management, increase use of recycled materials, save energy, and protect the environment, all while continuing to support the military mission.
- Continue efforts to eliminate excess facilities and drive down support costs.

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

Supporting Readiness and Quality of Life

The Department is steward of the world's largest dedicated infrastructure, managing about 42,000 square miles of land and a physical plant valued at about $570 billion. To manage this infrastructure effectively and economically requires engineering insight, business acumen, and sufficient resources. Base closures and overseas disposals significantly reduced that infrastructure to a level that better meets the needs of the nation's armed forces. However, DoD must continue building new facilities to relocate missions from bases designated for closure, replace uneconomical and severely deteriorated facilities, and support new or expanded missions.

The ability of DoD facilities to support and enhance military readiness depends on the condition of DoD's physical plant. Deteriorated facilities undermine readiness in two principal ways. First, deteriorated facilities are more likely to fail, and facility failures can directly compromise the mission. This lesson was learned during mobilization for Operation Desert Shield, when dilapidated rail lines and portions of aircraft runways failed due to the lengthy deferral of needed repairs. Second, deteriorated facilities impair readiness by lowering the quality of life of military and civilian families, by reducing the efficiency of uniformed and civilian workers, and by detracting from the 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.

Another Departmental initiative for improving the quality of life for military and civilian families is to improve the service provided during shipments of families' household goods. The effort includes simplifying household goods processes, improving quality of service, reducing loss and damage, and streamlining claims procedures.

Using Private Sector Methods to Enhance Military Housing

Individual surveys of Service personnel and their families, Military Service data, and the findings of the Defense Science Board's Quality of Life Task Force all confirm that the Department has not met its goal of providing adequate, affordable housing for all its personnel. While the extent of the problem varies among the Services, between unaccompanied and married quarters, and between on- or off-post accommodations, virtually every sector of the DoD housing market warrants significant improvement. This challenge is particularly acute if solutions are to be found within existing resource levels, while generating significant improvements in the near term.

The percentage of married personnel has steadily risen since the advent of the all-volunteer force. Currently, 60 percent of the force is married. Reflecting overall social patterns, the military force includes increasing numbers of single parent families, blended families which are often larger than average, and families in which both parents are service members. All these developments stress a housing delivery system that has proven inefficient and inadequate.

Service data paint a bleak picture. The private sector -- DoD's primary source of family housing -- supports about two-thirds of military families. About 12 percent of these families judge their housing inadequate, usually due to safety, cost, or commuting distance. Of the approximately 300,000 families living in government-owned or controlled housing, almost 200,000 families are considered unsuitably housed. The principal problems here are deteriorated conditions, small size, and lack of contemporary amenities. Much of DoD's family housing stock was built in the 1950s and 1960s and now faces block obsolescence. Large numbers of these quarters must be replaced or renovated to bring them to contemporary standards.

The barracks situation is no less acute. About 450,000 enlisted service members live in barracks -- most by direction, not choice. In all too many circumstances, these facilities are substandard, inadequately maintained, or obsolete. While government-owned family housing is on average 33 years old, barracks are about 40 years old, with many substantially older. The barracks challenge is exacerbated by rising expectations for accommodations by the professional enlisted force and the increasingly large gap between those expectations and DoD's deteriorating barracks stock. DoD has recently revised the Department's construction standard to meet contemporary needs. Unless DoD develops a more efficient delivery system, provision of these new quarters will extend for decades. Assuming current funding levels and procurement practices, the Department faces a 30 year timeline to resolve the family housing problem, and even longer for barracks. These alternatives are simply not acceptable.

After consulting with government and private housing experts, DoD concluded that a combination of private housing capital and commercial construction techniques could significantly improve the Department's ability to solve these problems. A joint-Service study team identified three basic categories of private financing tools that allow the Department to attract private capital investment: guarantees and direct loans, commitments, and investments. The National Defense Authorization Act for Fiscal Year 1996 provided authority to use these tools.

To use these tools, the Department established the Housing Revitalization Support Office (HRSO), jointly staffed by the Office of the Secretary of Defense (OSD) and the Services. In 1996, the HRSO plans to test these tools in a variety of markets. In following years, the Department anticipates a rapid increase in the use of these authorities to stretch appropriated funds with private capital. As the Services gain experience, the authorities will devolve to them. HRSO will finalize the policy and procedures, report to Congress, and request permanent authority for using the tools.

In addition, the Department is examining ways to draw more thoroughly on private sector management practices through the creation of service-specific, nonprofit housing corporations. Such organizations could increase private sector efficiencies of tools recently provided to the Department. Conceptual plans enabling legislation are currently under review.

Improving Installation Management

The integrated facility management approach is the catalyst for improving installation management policies, guidelines, and tools.

The annual DoD Installation Commanders' Conference and Commanders' Forum give installation commanders and DoD policy makers an opportunity to discuss new policies and to improve existing ones. The Department is collaborating with installations, major commands, and Service staffs to improve the ability of base commanders and managers to effectively manage their installations. This customer-focused perspective views the warfighting CINCs as the ultimate customers and the installation commanders and managers as the immediate customers responsible for providing the installation facilities and services required to sustain a ready force.

This effort stresses changing policy and developing methods and systems to enable installation commanders and staff to enhance their productivity and more effectively manage installation resources. The significant commonality across Services in installation management offers the opportunity to leverage scarce dollars and human resources. Value-added tools and management approaches include developing a common information technology operating environment and decision metrics for installation commanders. This long-term effort will strive to significantly improve installation management.

The Department of Defense is the largest centrally managed energy consumer in the United States. The Department's installations consume over 70 percent of the building and facility energy the federal government uses. It costs nearly $2.9 billion each year to heat, cool, light, and provide mission support energy to the 2.5 billion square feet of DoD floor space throughout approximately 400,000 buildings around the world. The Department recognizes its responsibility for energy efficiency and stewardship for the nation and is developing and implementing a vigorous program of energy and water conservation by changing utility procurement policies to reduce its annual energy bill by buying in bulk and taking advantage of rebates for demand reduction. The magnitude of the Department's energy use provides an opportunity to greatly reduce government costs through improving energy resource management and applying emerging technologies.

The Department historically is a leader in energy cost containment through conservation and participation in state utility regulatory proceedings. Increasing budget constraints make such efforts more important in the coming years. Energy efficiency does not mean shutting off energy supplies, reducing energy supplies, or making people uncomfortable. Many opportunities exist for using newer technologies and improving engineering techniques that improve productivity and comfort while reducing energy consumption and cost. DoD's focus is on a long term strategy to invest today to save in the future.

The primary long-term goals of the Department's program, reflected in Executive Order 12902, are to reduce, by the year 2005, installation energy use by 30 percent, from a baseline of 1985, and improve industrial energy efficiency by 20 percent by the year 2005, from a baseline of 1990. DoD also is required to identify and accomplish, by 2005, every energy and water conservation measure with a payback of 10 years or less. The FY 1994 cost avoidance resulting from the installation energy program is estimated at $300 million. Continued progress toward meeting program goals depends on increased program support and investment funding.

Resizing the Base Structure

The Department's Base Realignment and Closure (BRAC) process has been the major tool for reducing the domestic base structure. Three principles guide the Department's BRAC process: (1) improve military effectiveness; (2) save money by reducing overhead; and (3) achieve these goals through a fair and objective selection process. The 1988 Defense Secretary's Commission on Base Realignment and Closure approved 16 major domestic closures, as well as numerous small sites. The 1991 and 1993 Base Closure and Realignment Commissions are responsible for another 54 major closures. The 1995 Commission recommended closing an additional 27 major domestic installations.

While the Department has made significant progress, the domestic base structure continues to exceed needs. Even after the approved recommendations of these four BRAC rounds are implemented, the Department will have excess infrastructure. Balancing the Department's force and base structures by eliminating unnecessary infrastructure is critical to preserving readiness.

An important element of defense infrastructure is test and evaluation (T&E) facilities. Realigning and closing T&E facilities must be carefully planned to retain essential and unique capabilities. The Air Force consolidated T&E infrastructure by eliminating overlaps and realigning missions to three main sites. By FY 1997, the Army will consolidate T&E functions at five major test centers. Navy consolidated research and development T&E at four main test sites. The Services collectively oversee T&E downsizing through an Executive Agent, consisting of the Service Vice Chiefs of Staff.

In order to retain only those resources necessary to the Services' missions, the Department supports the 1995 Commission's recommendation that Congress authorize another BRAC Commission for the year 2001.

The following table depicts the costs and savings associated with BRAC.

Table III-5

BRAC Costs and Savings ($ million)

	BRAC 1988	**BRAC 1991**	**BRAC 1993**	**BRAC 1995**
6-Year Cost	1,931	3,593	6,320	3,600
Environment Cost	820	1,342	1,705	550
6-Year Savings	2,352	6,306	7,530	3,900
Annual Savings	700	1,600	1,900	1,600

The recommendations of the 1995 Base Realignment and Closure process will provide significant savings to the Department. Over the next 20 years, the total BRAC 95 savings will be approximately $19 billion. Once BRAC 95 recommendations are implemented, the Department will realize annual recurring savings from all BRAC efforts of approximately $6 billion. It is vitally important the Department rapidly implement the approved closure recommendations to

speed the economic recovery of affected communities and realize the expected savings to DoD and the taxpayers.

MEETING THE LOGISTICS MANAGEMENT CHALLENGE

An effective logistics program to distribute, maintain, and replace materiel is essential to mission success, that is to give combat units the equipment and support services they need when they need them. Operation Desert Storm demonstrated the need for effective logistical support. The management challenge for the logistics system is to maintain or improve levels of support to military customers while radically reducing the structure and overhead associated with delivering that support.

An intense, two-day off-site in August 1995 helped logistics managers focus on important logistics management initiatives. Senior Defense and logistics personnel from the Services and the Defense Logistics Agency (DLA) attended. The off-site provided an opportunity to focus on management initiatives currently being pursued and to set goals for future improvements.

Last year the Department issued a Logistics Strategic Plan to provide a comprehensive roadmap for improvement and to tie together initiatives coherently. The plan provides strategies for achieving more reliable, cost-effective, and prompt service, while concurrently reducing the Department's infrastructure. Defense plans and the Planning, Programming, and Budgeting System incorporate these priority strategies to enhance the ability to resource and monitor their implementation. Logistics personnel will use the plan in 1996 to measure progress and compare performance against the plan's goals and comparable goals identified at the logistics off-site.

Current logistics management initiatives that will be discussed in this section include improved customer support, privatization and outsourcing, successful business practices, improved asset management, improved logistics response time, and logistics business systems.

Improved Customer Support

The military departments are pursuing several maintenance management improvement initiatives that will lead to better customer support.

An Army initiative, Integrated Sustainment Maintenance (ISM), reduces logistics costs and enhances customer support by consolidating several levels of maintenance and moving repair capability as far forward as possible. ISM integrates requirements determination, asset availability, and maintenance capability at the national level. Under this concept, a regional workloader prioritizes and distributes work in that region, using centers of excellence, based on capabilities and repair programs. This concept should maximize repair capability and optimize the use of available resources.

The Navy is moving toward a regional maintenance concept. Under this concept, ship, aircraft, and component maintenance will be accomplished within a given region, using all available resources, regardless of the location at which maintenance is performed. Resources (equipment,

facilities, and personnel) would be shared among activities to ensure maximum resource utilization. Ultimately, the user will see only a single, accessible, responsible provider.

The Air Force's Lean Logistics effort, an interrelated series of logistics initiatives, will reduce infrastructure and shrink the logistics footprint, while maintaining capability and sustainability. A Two-Level Maintenance (2LM) concept with effective business practices (e.g., Just-in-Time and Electronic Data Interchange) will be implemented. Under the 2LM concept, the Air Force reduces intermediate-level maintenance requirements for selected avionics and engines, which in turn reduces base-level maintenance and support personnel, equipment, and facilities. High velocity, time-definite delivery of parts, with heavy reliance on the commercial transportation sector, will reduce inventory and increase pipeline flow. Reparable parts move from bases to repair centers at Air Force depots and then return to the bases via highly reliable transportation.

The net effect of these initiatives will be improved customer support, increased efficiency, better resource utilization, reduced infrastructure, and a shrunken logistics footprint.

Privatization and Outsourcing

As part of the Department's privatization and outsourcing initiative, it is assessing materiel management outsourcing opportunities in reutilization and marketing, distribution depots, inventory control point functions, and contractor supply support strategies. This assessment includes many issues: providing adequate capability to meet surge requirements during wartime; ensuring broad private sector participation; improving the contracting process; and eliminating restrictive regulations on the Defense customer. Initial materiel management privatization strategies will be available in 1996.

The Department is also reviewing outsourcing and privatization in the area of depot maintenance as recommended by CORM. During FY 1994, the Department spent approximately $13 billion for depot maintenance of weapons systems and equipment. In terms of commodities, fixed wing aircraft and sea systems each absorbed 35 percent of the available maintenance funding followed by combat vehicles, artillery, automotive, and other ground equipment with 17 percent; helicopters with 5 percent; communications and electronics with 4 percent, and missiles with 3 percent.

The Department agrees with the CORM recommendations for outsourcing depot maintenance. However, it must retain a limited organic capability to meet essential wartime surge demands, promote competitions, and sustain institutional expertise. Initial planning for determining and achieving the proper balance between public and private sector sources has begun. A major objective within the plan will be to sustain materiel readiness at current levels throughout the transition to greater privatization to the extent the law permits. As a result of budget considerations and the general drawdown of military forces, the Department is continuing the already dramatic reductions in the maintenance infrastructure (facilities and personnel) in depot maintenance.

Successful Business Practices

The Department implements successful business practices from industry and expands best processes from within DoD. An Inventory Control Point Benchmarking Team reviewed several commercial analogs to Inventory Control Point processes and found ways to improve inventory management. Direct vendor delivery is now the norm for pharmaceutical requirements and some clothing. Commercial distribution of subsistence at shore dining facilities began last year. Local purchase authority for centrally managed items was increased. Field activities can make best value purchases and limit using the central supply system to cases where value is added. The Navy and DLA are pioneering a concept of aggregating purchases from multiple Inventory Control Points to a single source in one contract to get better prices.

A significant change in the approach to automated depot maintenance systems is to use a Manufacturing Resources Planning environment, rather than specifying the exact software to be used. Implementing an improved system and a common operating environment will result in increased economies and faster return of weapons and equipment to the joint warfighters.

The Defense Medical Logistics Standard Support (DMLSS) program will integrate the medical materiel and services logistics functions with commercial practices, provide more products and services faster for lower costs, and eliminate redundant maintenance and overhead of eight Service and Agency legacy systems. The Prime Vendor Program (Pharmaceutical) segment of the DMLSS has been implemented at 150 ordering sites, including Europe.

Improved Asset Management

The National Security Strategy to fight and win two nearly simultaneous major regional conflicts with less investment in war reserve inventory requires the Department to cut inventories and distribute materials into common-user stockpiles to support multiple theaters. Maintaining visibility of material in storage and transit and rapidly transporting stocks between theaters are essential to this new logistics doctrine.

The Department has exceeded its inventory reduction goals. Since 1990, the Department reduced its inventory from $104 billion to approximately $76 billion through FY 1994 in constant FY 1995 dollars. Further reductions will leave an inventory of approximately $55 billion by 2001 in constant FY 1995 dollars. Disposal actions, handled by Defense Reutilization and Marketing Service (DRMS), increased from $10.6 billion in FY 1990 to $25 billion in FY 1994, the last year for which statistics are available. DRMS efficiently managed this workload increase while reducing processing sites by 9 percent and limiting workforce growth to 4 percent.

DoD reduced covered storage by 29 percent and decreased storage locations from 57 to 35 between September 1992 and June 1995. BRAC 95 will further decrease the total number of storage sites to 19 by the end of FY 2001. Since 1990, DLA has seen $845 million in savings for military construction, personnel, and equipment, due to depot consolidation improvements, reduction in distribution workload, and a BRAC-mandated reduction in distribution infrastructure.

Total Asset Visibility (TAV) is the ability to provide timely, accurate information across the functional areas of procurement, supply, transportation, maintenance, personnel, and medical, and through all management levels from wholesale through retail. TAV tracks the location, movement, status, and identity of personnel, equipment, units, and supplies within and among the components and the unified commands. The need for TAV is based on increasing readiness and reducing the cost of providing logistics support. As DoD downsizes, TAV contributes substantially to efficiency improvements. Managers can offset wholesale procurements with excess retail assets; users have increased confidence, thereby reducing duplicate requisitions; and TAV exposes bottlenecks in the supply and transportation systems. The Joint Logistics Advanced Concept Technology Demonstration, initiated in FY 1996, will develop a logistics information management and planning tool to support the Commanders of Joint Task Forces, as well as the unified CINCs.

A major transportation initiative of TAV is Intransit Visibility (ITV), the capability to track defense cargo as it moves in unit deployments, sustainment, and redeployments, as well as track passengers, medical patients, and personal property from origin to final destination. The transportation program supports moving materiel, personnel, personal property, and maintaining transportation infrastructure services. In FY 1995 DoD's transportation program cost over $10 billion. The Department relies on the commercial transportation industry to meet over 85 percent of its peacetime and wartime transportation requirements. DoD refines partnerships with that industry to promote a better understanding of military requirements and commercial capabilities to allow maximum use of industry's extensive capabilities to meet peacetime and mobilization requirements.

The Global Transportation Network system is being developed to support an integrated ITV capability, which translates into reduced procurements and inventories and a shorter pipeline. This will save costs significantly, but place greater demands on the transportation system for expedited delivery. Building a unified, common-user TAV capability, reaching from the unit, depot, and vendor to the foxhole, is one of the Department's highest logistics priorities.

Improved Logistics Response Time

Last year the Department began an initiative to reduce logistics response time. To meet the needs of a smaller, more mobile force, with a smaller logistics infrastructure, a major shift is required towards customer needs and customer measures of logistics system performance.

Slow response times undermine the customers' confidence in the supply system and drive the need for increased inventory levels. Progress was made in improving time measurement and reporting, essential first steps to enhancing the performance of segments of the logistics pipeline. Automated data collection is expected to improve. New performance standards require accelerated processing of customer requisitions. Process improvements were initiated; many have produced dramatic improvements. DLA's efforts reduced distribution processing times at one depot by 12 days; two depots reduced processing times by one-half. A government-owned, contractor-operated depot, established in Memphis, Tennessee, provides premium delivery service for selected items. The depot, operated for the government by a private sector firm, began

operations last summer. The Department is studying trade-offs between supply and transportation to optimize performance and costs.

Ongoing transportation initiatives, such as ITV, will result in savings by reducing transportation costs and reducing logistics response time by improving transit times. Other programs, promising improved readiness and cost reductions, are the Reengineer the Transportation Process, the Joint Transportation Corporate Information Management Center (JTCC), and the Defense Transportation Electronic Data Interchange (EDI) initiatives. A Reengineering Transportation Task Force is reengineering the Department's transportation acquisition and financial processes. The JTCC is standardizing transportation migration systems to avoid system duplication. The Defense Transportation EDI initiative reduces manpower, time, and paper flow currently required for acquiring and paying for transportation services.

A portion of the Logistics Response Time initiative looks to improve both retail (base level) maintenance and wholesale (depot level) maintenance repair cycle times. Identifying metrics for maintenance will include standards for local and depot repair cycle times, resulting in satisfying customer orders in a more timely fashion, thereby reducing inventories.

Logistics Business Systems

Significant progress has been made in developing and implementing modern logistics information systems. These systems and process improvements will support an annual defense logistics cost of more than $44 billion, involving more than 2.2 billion transactions from over 1,000 locations that acquire, maintain, and distribute inventory valued at over $70 billion. This effort, a major focus at the logistics off-site, emphasizes using standard logistics data to facilitate implementing technologically advanced automated information systems. High levels of data accuracy and reliability diminish the uncertainty of logistics business decision making. The Logistics Integration Team was set up to develop a common architecture, data migration strategy, coordinated deployment schedule, and procedures to support joint site surveys. The objective is a common operating environment using standard data which can be separated from applications and shared by many users so that logistics systems will operate together. This approach, coupled with open systems architecture, relational data bases, reliable communications, and standard Electronic Commerce (EC)/EDI transactions, will enhance the responsiveness of support to joint operations in materiel management, depot maintenance, distribution, transportation, and medical logistics.

The Joint Engineering Document Management Information and Control System (JEDMICS), the Global Data Management System (GDMS), and the Work Flow Manager products of the Joint Computer Aided Acquisition and Logistics Support System (JCALS) substantially progressed during this past year. The JEDMICS release 2.5, available late November 1995, provided the minimal functionality required to retire the Army and Air Force legacy document control systems. JEDMICS will support the Services and DLA during 1996. The GDMS and Work Flow Manager products of the JCALS program were successfully tested and approved for implementation.

Pilot efforts to integrate the JEDMICS, GDMS, and the Work Flow Manager products of JCALS with elements of the materiel management and depot maintenance systems show success. JCALS products successfully demonstrated utility and flexibility in supporting the DDG-51 Aegis Shipbuilding Program. The Air Force started a similar initiative at Warner-Robins Air Logistics Center, Georgia, supporting the F-15, which promises equivalent levels of success. The Army developed a plan for incorporating the JEDMICS and JCALS products into Combat Mobility Systems as a pilot, forming the foundation for an Army-wide integrated data environment (IDE) and a transition to a paperless acquisition process for many Army programs.

The Continuous Acquisition and Life Cycle Support (CALS) strategy primarily consists of identifying requirements for exchanging and sharing integrated digital product data, easily and accurately, among dissimilar processes and systems using a set of standards. The CALS Office was restructured to use Integrated Product Teams (Thrust Area Teams) to facilitate CALS strategy implementation throughout DoD. A DoD Master Plan defines the CALS strategic overview, implementation strategy, IDE template, and a concept of operations.

The Services successfully implemented the CALS strategy in a number of weapon system programs. The Army's Combat Mobility System developed a plan to completely reengineer its business process using the CALS strategy. The Army Missile Command's Lead Army Materiel Command Integration Support Office will lead and facilitate transitioning standard systems, processes, and technical infrastructure to the IDE. Four weapon systems are initially targeted: the Multiple Launch Rocket System, Patriot, Javelin, and Hawk. The other Services achieved equivalent successes this year.

NATO approved a CALS strategy in June 1995. The United States chairs the NATO CALS Management Board. A memorandum of understanding that 10 nations signed in November 1994 will soon add two nations, Belgium and Denmark.

The CALS Office supports acquisition reform by reviewing, consolidating, and eliminating CALS documents which increase costs, replacing them with commercial and industry documents, where feasible, or providing a way to adopt International Standards Organization documents. A CALS-led joint working group is reducing Data Item Descriptions (DIDs). Results to date are a 13 percent reduction of DIDs equating to an Office of Management and Budget paperwork burden reduction of 1.2 million man-hours.

The CALS Office is also facilitating a transition to the UN/EDIFACT standards set supporting requirements for Electronic Data Interchange. UN/EDIFACT is an internationally accepted standards set.

The Distribution Standard System (DSS), flagship of the logistics systems modernization effort in terms of management and results, will be implemented by FY 1997. The development and deployment strategy incrementally adds process improvements in distribution depots which receive, store, and issue DoD assets. The DSS will allow early deployments, legacy system replacement, and improved return on investment. It currently supports the distribution mission of seven depots, accounting for over 50 percent of the Department's workload.

CONCLUSION

The Department continues its efforts to ensure quality facilities to support the Defense mission. Through leveraging private sector capital, improved management, energy savings initiatives, and rapidly implementing approved base closures, the Department of Defense is meeting the challenge of a dwindling Defense top line. By implementing these initiatives, the Department intends to properly size infrastructure, support readiness and quality of life, and manage its installation costs effectively and efficiently.

Chapter 17

SCIENCE AND TECHNOLOGY

INTRODUCTION

The DoD Science and Technology (S&T) vision is to develop and transition superior technology to enable affordable, low casualty, decisive military capability and enhance economic security. Superior technology and systems have been the cornerstone of U.S. national military strategy since the Cold War began. This edge is even more important today as the size of U.S. forces decreases and high technology weapons are readily available on the world market. It is imperative U.S. military forces possess technological superiority to minimize casualties across the broad spectrum of engagements that may be encountered. DoD will leverage commercial technology and fund industry, academia, or government laboratories to perform the S&T necessary to achieve this vision and protect the readiness of U.S. future forces.

The objectives of the S&T program are to develop technologies critical to maintaining the most capable military force in the world, and to extend the basic sciences to form the groundwork for the next generation of technology. Beyond this, defense scientists and engineers must be expert advisors to the requirements community and smart buyers in acquisition. DoD cannot afford technological surprise. To meet this challenge, DoD maintains a comprehensive, balanced program across the spectrum, from basic science to the development and demonstration of advanced technologies.

The Defense S&T Program is guided by the President's strategy presented in *National Security Science and Technology Strategy*. The following elements guide U.S. investment:

- Maintain technological superiority in warfighting equipment. Technological superiority underpins the National Military Strategy, allowing the United States to field the world's most potent military forces.
- Provide technical solutions to achieve the Future Joint Warfighting Capabilities. The Joint Staff and Joint Requirements Oversight Council (JROC) identified five warfighting capabilities most needed by future U.S. forces. The S&T program is directed toward providing these.
- Balance basic research and applied technology in pursuing technological advances. Today's basic research is the foundation for tomorrow's technology, and today's technology is the foundation for tomorrow's superior weapons and equipment.
- Incorporate affordability as a design parameter. Affordability must be integrated into the design of military systems from the beginning so that the cost of advanced systems will not spiral upward uncontrolled.

MEETING THE WARFIGHTERS' NEEDS

While technological superiority remains a guiding objective, the new world demands DoD improve the balance among technology, product, and process and also reduce the time between developing a new concept and fielding the new capability. Lower budgets increase the emphasis on affordability, longer lived weapon systems, and evolutionary insertions of new technology to extend the capabilities of existing systems.

The JROC identified the following five Future Joint Warfighting Capabilities as most needed by the U.S. combatant commands:

- To maintain near perfect real-time knowledge of the enemy and communicate that to all forces in near real-time.
- To engage regional forces promptly in decisive combat on a global basis.
- To employ a range of capabilities more suitable to actions at the lower end of the full range of military operations to allow achievement of military objectives with minimum casualties and collateral damage.
- To control the use of space.
- To counter the threat of weapons of mass destruction and future ballistic and cruise missiles.

Subsequently, 12 important joint warfighting operational capabilities that require DoD S&T investment were identified. Selected highlights of S&T programs directly contributing to meeting these needs are briefly described below.

Dominant Battlespace Knowledge

DoD and all the Services are pursuing systems and policies aimed at enhancing the capability of the Joint Task Force commander to operate inside an adversary's decision loop by obtaining dominant battlespace knowledge. Dominant battlespace knowledge requires the combined capabilities of battlespace management systems; command, control, communications, and computer systems; and intelligence, surveillance, and reconnaissance systems to acquire and assimilate the information needed to dominate and neutralize adversary forces. DoD policies mandate interoperability among the Services. Individual Services fund specific programs such as the Army Digital Battlefield, the Navy Copernicus, and the Air Force Horizon Vision. These programs will increase the situational awareness of commanders by providing them information about friendly and enemy forces as well as the environment. Integrated systems -- surface, air, and space borne -- will provide a high fidelity, interactive picture of friendly and enemy operations directly to the commander, thus achieving dominant battlespace knowledge.

The Defense Advanced Research Projects Agency (DARPA) brings much information technology experience to bear on the difficult problem of providing information dominance. Efforts are concentrated in comprehensive battlefield awareness and planning, replanning, and near real-time command, control, and communications (C3). In the first area, DARPA is working on the tools and technologies necessary to transform sensor and intelligence data into useful information for the warfighter and disseminate it to the right place at the right time. In addition,

DARPA's planning and C3 technology developments will enable warfighters to quickly develop, evaluate, disseminate, execute, and monitor courses of action tailored for the particular situation, the types of forces available, and the military result desired. The goal is complete replanning and dynamic retasking in near real-time. The joint Service and DARPA Speakeasy program, to develop the technology and demonstrate an advanced digital radio providing for common communications between Services, provides an important joint and coalition warfare capability.

Combat Identification

Combat Identification requires the assured, reliable identification of friendly versus adversary forces, thus enabling the engagement of targets at weapon range rather than at visual identification range. The Army Combat Identification program uses a millimeter wave interrogation/response system to identify friendly systems on the battlefield and is exploring the advancements offered by improved situational awareness derived from battlefield digitization. Air Force Combat Identification also uses interrogation/response for aircraft targets, and it maintains compatibility with the current Mk 12 and systems used by commercial aviation. Other Air Force and Navy combat identification efforts focus on noncooperative target recognition technologies, including inverse synthetic aperture radar imaging, jet engine modulation, and unintentional modulation on pulse-based specific emitters, as well as improved waveforms for the Mk 12. Success in all three areas -- cooperative systems for ground targets, cooperative systems for air targets, and noncooperative systems -- is needed to achieve an adequate combat identification capability.

Information Warfare and Security

Information Warfare and Security is the capability to achieve information superiority by affecting adversary information and systems while protecting U.S. and ally information and systems. As the military comes to rely more and more on information on the battlefield, the underlying technology to permit information to be shared through massive, robust, and mobile battlefield networks becomes paramount. So does the need for technology to assure the survivability of these networks and other U.S. information systems. These two underlying technologies are DARPA and Army investment areas. The Air Force is developing the capability for highly secure, highly directional communications using high power semiconductor laser technologies. In addition, as military information systems increasingly leave fixed command centers and migrate to mobile platforms and the pockets and palms of combatants, the microelectronics devices and systems technologies that enable and pace the migration of small, lightweight, conformal, and mobile information systems become critical developments.

U.S. forces must also be assured access to space while denying the same to adversaries. The Air Force is pursuing a variety of techniques in directed energy from lasers and high power microwaves designed to disrupt the function of enemy space assets, and is investigating the susceptibility of U.S. assets to such attacks. Scientists at the Starfire Optical Range in New Mexico are performing critical experiments in optical beam forming and beam control for illuminating, tracking, and active imaging of satellites. The Air Force and the Ballistic Missile Defense Organization (BMDO) are developing high performance infrared focal plane arrays needed to quickly and assuredly detect, classify, and confirm ingressing ballistic missile attacks

and to notify defense forces and threatened areas. Space is the ideal base for performing these functions but this requires highly advanced sensors. This capability also benefits counterproliferation and joint theater missile defense.

Precision Force

Precision Force is the capability to destroy selected targets remotely and with precision while limiting collateral damage. The Services are advancing data fusion and automatic target recognition technologies with precision location so weapons can find the type of target specified or even the particular target specified, and guide a weapon to hit the target within a few feet of a designated impact point quickly. Army efforts focus on demonstration of end-to-end, sensor-to-shooter precision strike for location, identification, and elimination of short-dwell targets. The Air Force hyperspectral sensor program is one promising approach, and use of three dimensional information from a laser radar is proving to be especially successful. A Navy initiative to destroy time-critical targets will demonstrate the capability to redirect attack aircraft and cruise missiles while enroute on a mission exploiting real-time retargeting updates.

These technologies and a hardened Global Positioning System are being demonstrated for possible application to existing weapons (e.g., the Tomahawk cruise missile) and new weapons (e.g., the Navy effort to demonstrate an inexpensive cruise missile and the Air Force effort to develop small smart bomb technology). The Army also is exploring precision force with lightweight non-line-of-sight systems for air deployed early entry forces. This system concept uses teleoperation with fiber-optic or radio frequency data links.

Joint Theater Missile Defense

Joint Theater Missile Defense uses the assets of multiple Services to detect, acquire, track, and destroy enemy theater ballistic missiles and cruise missiles. The Air Force Airborne Laser (ABL) program is developing a fully operational, extremely long-range airborne laser system that will destroy enemy theater missiles during their boost phase. The ABL program will be a revolutionary change in the concept of weapons employment for the warfighter. BMDO is conducting research on space-based chemical lasers as an alternative concept for this mission, and Navy S&T is directed toward providing a ship-based component of Joint Theater Missile Defense deployable to nearly all theaters of interest, and achieving Precision Strike with cruise missiles that can locate specified targets autonomously. DARPA has been investing in both infrared and radar technologies for cruise missile defense for a number of years, and now plans to demonstrate these technologies in military scenarios.

Electronic Warfare

Electronic Warfare is the degradation of enemy radars and communications by jamming or electronic deception. For example, tactical aircraft are made more survivable by the capability to degrade or neutralize the effectiveness of enemy air defenses, over the areas and times required, to perform their missions. Advanced signals intelligence (SIGINT) from manned and unmanned aerial vehicles for finding the air defenses and for recognizing attempts to track and engage the aircraft is another critical element in suppression of air defenses. Supplementing the traditional

use of electronic countermeasures, the Air Force is demonstrating the capability to damage components of an air defense system using extremely high power microwaves. There are similar programs for protection of land vehicles and ships.

In further efforts to enhance the survivability of both manned and unmanned aircraft, the Air Force is evaluating a powered submunition with a laser radar that can acquire ground-based air defenses within a large search area and destroy them. It could apply to both Joint Theater Missile Defense and Suppression of Enemy Air Defenses (SEAD). Also the Air Force/Navy stealth program applied to high performance tactical aircraft is vital both for suppression of defenses and for survival from the air defense threat.

Counterproliferation

The Counterproliferation program is developing the capability for detecting the manufacture, storage, and employment of weapons of mass destruction, and the capability to destroy the weapons and related materials and facilities. Many nations are placing their critical military assets in buried facilities or tunnel complexes. Utilizing its experience in nuclear effects and its field test facilities, the Defense Nuclear Agency (DNA) is assisting the Service laboratories to improve the lethality of conventional weapons for attacking underground facilities. Innovative warhead technologies, not dependent on high explosives, are also being investigated as entirely new ways to destroy chemical, biological, and nuclear materials and weapons; and DNA is developing advanced prediction models for the dispersal of nuclear, biological, and chemical agents released into the atmosphere. The Air Force is exploring hypersonic weapons that, when used with real-time target acquisition and communications systems, can provide a means to quickly destroy the mobile launchers for weapons of mass destruction.

Chemical and Biological Warfare Detection

The Chemical and Biological Warfare Detection program is developing the capability to rapidly detect and assess the threat posed by these agents and to provide adequate warning. U.S. forces need to detect chemical and biological agents remotely and accurately identify the agent. The Army serves as executive agent for the entire chemical and biological defense program for all Services. The Army also serves the Services by developing vaccines and other antidotes for chemical and biological agents, and by developing protective clothing and the technology for filtration systems needed on vehicles so operations can continue even in a contaminated environment. DoD has the Department of Energy's Lawrence Livermore National Laboratory investigating the use of a laser to remotely detect agents in the atmosphere. Ongoing research by DARPA and the Naval Research Laboratory has developed a biological agent detector that uses sensitive cell surface receptors located on the surface of living neural cells. Another version of this technology uses a set of designer (manmade) receptors that theoretically can identify the specific agent from hundreds of possibilities.

Countermine

The DoD Countermine program seeks to provide the capability for assured, rapid neutralization of land and sea mines to enable amphibious and ground force operational maneuvers and forced

littoral entry. The Army and Navy/Marine countermine and littoral warfare programs are directed at the very difficult problems in the land and sea countermine mission. These programs, as well as the Joint Countermine Advanced Concept Technology Demonstration (ACTD), focus on shallow water, surf zone, and beach areas where acoustical characteristics and visibility are poor.

Additionally, the Army and DARPA are exploring the use of infrared cameras and ultra wideband radar to find mines on land. This radar technology might also be useful for the counterproliferation mission by finding entrances to underground facilities and finding missile launchers hidden in wooded areas. Much of the countermine technology effort is relevant to solving the vexing international peacemaking and peacekeeping problem of identifying and demining civilian areas as in Cambodia and Bosnia and Herzegovina. Under the Technical Cooperation Program, the United States, United Kingdom, Canada, Australia, and New Zealand are jointly researching the demining problem.

Military Operations in Urban Terrain

Military Operations in Urban Terrain (MOUT) require the capability to achieve military objectives with a minimum of casualties and collateral damage in urban and industrial areas. The Army 21st Century Land Warrior program gives individual soldiers the means to communicate soldier to soldier within a squad and to navigate even within the urban environment. Nonlethal weapons technology is being developed including less than lethal means to control individuals or crowds, and a MOUT ACTD featuring a variety of new system concepts and advanced simulation will be conducted.

Real-Time Logistics Control

Real-Time Logistics Control means near real-time visibility into the entire logistics support structure for U.S. forces, including visibility across the Services of material in transit as well as in storage. This can be accomplished only through application of massive databases, high capacity computers, automated data input devices, and advanced software systems. The Army is exploring automated planning tools coupled to real-time databases for its logisticians. The S&T program supports all of these elements, but commercial technology will apply to some of this need and will be exploited for affordability wherever possible.

Joint Readiness

Joint Readiness is the capability to enhance readiness for joint and coalition operations, including the capability for enhanced simulation for training and operation planning. DARPA has focused on realistic advanced simulation to provide a viable synthetic theater of war. The intent is to create technologist/ warfighter interaction in a realistic environment that will enable the innovation and interoperability that historically has only been achieved in real crisis or war. This technology can support joint and Service training and mission rehearsal and provide the capability to examine the contribution of new weapons systems, doctrines, and organizations to the full spectrum of military operations.

TECHNOLOGY

There are always far more opportunities to push the frontiers of science, reduce new knowledge to mature technology, and apply this technology to U.S. needs than this country can afford to pursue. Priorities must be established to guide the makeup of the S&T program. The following concepts are critical to achieving the future joint warfighting capabilities discussed above:

- Within Intelligence, Surveillance, and Reconnaissance (ISR), imagery from synthetic aperture radars, moving target indicator radars, and infrared cameras is to be fused to obtain a common picture of the battlespace. Automatic target recognition (ATR) algorithms enhance the immediate utilization of this imagery, and unmanned aerial vehicles carry the sensors to provide this imagery for all echelons of command.
- Within Command, Control, Communications, Computers, and Information (C4I), communication and data links will utilize digital relay by satellite that will support joint and coalition operations over an entire theater, and will allow forces at all echelons to draw from remote databases the information most needed for their success. Direct connectivity from sensor to shooter will achieve nearly instant response to targets found by the ATR systems, giving a new ability to attack fleeting targets.
- Within Precision Force, interoperability among the Services and U.S. allies will be achieved through use of common systems and standards. Programs will balance affordability, survivability, lethality, and supportability. Sensors, communications, and precision weapons will be integrated to realize a joint target engagement system. These advanced capabilities will yield an important new capability to find and attack ground elements of the threat theater ballistic and cruise missiles.

Technologies that will help us realize the full potential of the above concepts follow:

- Information technology is dramatically changing the battlefield and the littoral zone. This technology enables better performance of vehicles, weapons, sensors, and people. Information technology is the basis for continual improvement in communications; intelligence gathering, analysis, and distribution; precision strike; vehicle control; sensor data processing; and human performance. In addition, information technology improves the capability of support services such as logistics, medical care, and transportation. Information technology includes all the means to process, store, distribute, and display information. This requires computers, signal processors, controls and displays, communication links, and the software required to make this hardware work.
- Sensors are the primary source of real-time information. For surveillance of large areas, synthetic aperture radars developed by the Services provide day/night all weather imagery of nearly photographic quality. Infrared cameras utilizing advances in focal plane array technology provide even higher quality imagery under favorable weather conditions. All of this imagery is being digitized so that it can be processed and transmitted without loss of information. Image processors, essentially very fast computers, now provide a way for U.S. forces to quickly find the important elements in the images, a function still widely performed by tedious manual inspection. There also are sensors suited to special needs and environments. For example, acoustic and seismic

sensors can locate and identify vehicles on the battlefield, while acoustic and magnetic sensors play a vital role in finding enemy submarines and mines.

- Simulation is emerging as a key element in nearly every aspect of military capability development from virtual prototyping of advanced concepts, to developing the right technologies, to operating the systems and fighting the force in the most effective way. An exciting development in modern simulation is distributed interactive simulation. In distributed interactive simulation, real people can take part, using real equipment to do the things they have to do in a real war. Other people and systems are simulated by computer models. This allows some people to be trained (or to develop tactics or to evaluate the utility of a particular system capability) while the influence and interactions of other people, units, and systems are simulated. With modern communications, the various elements do not need to be in the same location. This allows participants to use the very same equipment in the simulation they would use in war, and this makes the experience realistic and directly transferable to wartime operations. This is particularly important for providing commanders the opportunity to develop and evaluate operation plans. Even during a war, alternative plans can be tried out through simulation before being implemented. These two ideas are expressed as train-as-you-fight and take-the-simulation-to-war. To make distributed simulation possible, the various models and communications must comply with a consistent set of protocol standards. These are being established in the DoD Common Technical Framework program, consisting of the high level simulation architecture and conceptual models of the mission space.

The total DoD technology program is organized by technology area as listed in Table III-6. About 36 percent of the DoD investment is for exploratory development, and 49 percent is for advanced technology development. Performance of the technology program is split about two-thirds by industry, nonprofits organizations, and academia, and one-third by the defense laboratories. Most of the work is managed by the Services, including work performed for the Defense Advanced Research Projects Agency, Defense Nuclear Agency, and Ballistic Missile Defense Organization.

Table III-6

Defense Technologies	
Aerospace Propulsion and Power	Environmental Quality and Civil Engineering
Air Vehicles and Space Vehicles	Human Systems Interface
Battlespace Environments	Individual Survivability and Sustainability
Biomedical Applications	Manufacturing Science and Technology
Chemical and Biological	Manpower, Personnel, and Training
Command, Control, and Communications	Materials, Processes, and Structures
Computing and Software	Modeling and Simulation
Conventional Weapons	Sensors
Electronics	Surface/Under Surface and Ground Vehicles
Electronic Warfare and Directed Energy Weapons	

RESEARCH

Basic research is the foundation for future technology development. The objective of DoD basic research is to produce knowledge in a science or engineering area that has military potential. This is inherently a long-term investment, with emphasis on future opportunities. Whether a particular scientific discovery will lead to a military application usually cannot be known until long after the discovery. The DoD basic research investment is focused on those disciplines that have a potential relationship to a military function or operation.

Funding decisions for the 12 programs listed in Table III-7 weigh both technical quality and military relevance. Research programs are subjected to rigorous merit review. About 15 percent of defense S&T investment is devoted to basic research. About 60 percent of the work is done at universities while defense laboratories do most of the remainder. Research done at universities pays dual dividends. In addition to producing new knowledge of military relevance, this program has long been a principal source of funding to produce graduate scientists and engineers in disciplines important to national defense and economic security.

Table III-7

Basic Research Program Investments	
Atmospheric and Space Sciences	Materials Sciences
Biological and Medical Sciences	Mathematics
Chemistry	Mechanics
Cognitive and Neural Sciences	Ocean Sciences
Computer Sciences	Physics
Electronics	Terrestrial Sciences

CONCLUSION

These are exciting times in science and technology because of rapid advances in several important areas -- electronic devices, sensors, information processing, communications, simulation, combat identification, target recognition -- areas that open the door for capabilities far exceeding those fielded today. Some of this new technology comes from the commercial world but can be applied to national security. Recognizing the opportunities presented by new commercial and defense technologies is a challenge in itself, and using these technologies to give the warfighters new capabilities while lowering costs is a further challenge. The science and technology program meets these challenges through a balanced program of basic research and technology development responsive to the needs of the warfighter and the acquisition community.

Chapter 18

LAND FORCES

INTRODUCTION

The Army and Marine Corps constitute the nation's land forces. These forces provide unique and complementary capabilities for carrying out military missions. The Army provides forces for sustained combat operations on land, as well as for power projection and forcible-entry operations. The Marine Corps, as part of the nation's maritime forces, provides expeditionary forces to project combat power ashore either in support of naval campaigns or in conjunction with Army and Air Force units. These diverse capabilities give military commanders a range of options for conducting ground operations. Operationally, land forces are assigned to a joint force commander, who employs them in close coordination with aviation and naval forces.

The Army maintains heavy and light forces, based both in the United States and overseas. 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. 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 and heavy forces can operate independently or as part of a unified force, as was done in the Gulf War. Depending on the geographic location of both the forces and the crisis, Army forces stationed overseas provide either an initial or an additional source of combat power for regional deployments. For major conflicts, the Army can dispatch a U.S.-based contingency force of up to seven divisions plus support elements to any region of the world.

The Marine Corps maintains forces designed for seabased, self-sustained power projection and forcible entry ashore. Marine units are employed as part of Marine Air-Ground Task Forces (MAGTFs) consisting of four elements: ground combat, air combat, command, and service support. (The fixed-wing aviation component is discussed in the Aviation Forces chapter of this report.) Marine Expeditionary Units (MEUs), consisting of about 2,000 Marines, are forward deployed continuously in or near regions of vital U.S. interest; for example, in the past year MEUs have been embarked on amphibious ships patrolling in the western Pacific, near the Persian Gulf, and in the Mediterranean and Adriatic Seas. These forces provide a swift and effective means of responding to fast-breaking crises and can remain on station for indefinite periods of time, ready to intervene or take action if needed.

THREATS

During the Cold War, the United States knew with some confidence the location, size, and type of forces it could face in combat. Today, while the prospect of global war has diminished, the world remains a dangerous place and the contingencies for which DoD must plan pose threats that are in many ways more diverse and unpredictable. To hedge against these unknowns, the United States must consider in its planning the range of operations that might be conducted, as well as the weaponry that potential adversaries might employ.

Operations

- Major regional conflicts (MRCs). Land operations in an MRC would entail large-scale, armored combat against forces up to a million strong. An opposing force could employ possibly 2,000 to 4,000 tanks, 3,000 to 5,000 armored fighting vehicles, and 2,000 to 3,000 artillery pieces. MRCs also pose the risk that weapons of mass destruction -- chemical, biological, or nuclear -- could be employed against U.S. forces.
- Lesser regional contingencies, peace operations, and other smaller-scale deployments. Lesser contingencies most likely would involve dismounted infantry operations against paramilitary forces, militias, rogue militaries, organized terrorist forces, or other irregular forces. Heavier forces could be introduced if the situation warranted. In such operations, U.S. forces would often be employed in close coordination with other forces, including United Nations forces.

Threat Weapon Systems

In general, land force threats encountered in MRCs would be standing armies of foreign powers, armed with mixes of old and modern weapon systems. Many nations, including members of NATO and the former Warsaw Pact alliance, are selling weapons on the international market. Thus, U.S. forces must be prepared to encounter a wide variety of systems in combat, including possibly some originally 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 MI-50 Hokums, and upgraded French SA-342 Gazelles.

New weapon technologies will add more advanced capabilities to threat forces. 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, increasingly accurate tactical ballistic missiles, and advanced artillery munitions.

Irregular forces will continue to be unable to match the combat power of heavy U.S. weaponry. However, these forces can still pose difficult challenges to U.S. forces. The proliferation of modern light arms, a fighting style that could necessitate operations in dense urban environments, and the ability of indigenous forces to submerge themselves within civil populations could negate some of the advantages of U.S. heavy weaponry.

FORCE STRUCTURE AND CAPABILITIES

Major Regional Conflicts

Major regional conflicts pose a heavy demand on U.S. forces and thus drive most force requirements. Land forces would play critical roles in all phases of an MRC. Described below is the Department's planning framework for MRCs. The Department recognizes, however, that the

course of actual conflicts may be very unpredictable and therefore maintains the flexibility needed to cope with this uncertainty.

- Phase I -- Halting the Invasion. Selected Army forces and Marine MAGTFs would move rapidly to help coalition forces establish a viable defense, thereby minimizing the loss of critical facilities and territory. These forces would be introduced through friendly ports and airfields, if possible. If necessary, forcible-entry operations could be conducted using sea-based, airborne, or air assault forces working singly or in concert. Selected heavy force elements, falling in on prepositioned equipment, also would participate in this opening phase of an MRC. Aviation and maritime forces would establish control of the air and sea, thus protecting the deployment and employment of ground units.
- Phase II -- Force Buildup. As heavier ground elements arrived, emphasis would shift from halting the invasion to preparing for a counteroffensive. The majority of U.S. forces would reach the theater during this phase. Combat forces would arrive and deploy, and support forces would establish the necessary logistics structure to sustain large forces in intensive combat operations. Amphibious, air assault, and mechanized forces would conduct limited 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. U.S. and coalition forces also would conduct an air campaign during this phase, in preparation for the counterattack.
- Phase III -- Counteroffensive. Once sufficient forces were available in the theater, a large-scale air-land counterattack -- possibly including an amphibious assault -- would be launched. Land forces would have primary responsibility for engaging, enveloping, 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. The objective of the counteroffensive is decisive defeat of the enemy.
- 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.

The requirements of these major combat operations drive the overall size and structure of Army and Marine forces. To handle a single MRC, the Bottom-Up Review (BUR) concluded that the United States needs a force of four to five Army divisions, four to five Marine brigade-equivalents, and enhanced readiness brigades from the Army National Guard (ARNG). In order to prevail in two nearly simultaneous MRCs, based on the BUR analysis the Department has programmed the following forces:

- Ten active component Army divisions.
- Fifteen enhanced readiness brigades of the Army National Guard, each capable of deploying within 90 days.
- Three Marine Expeditionary Forces (MEFs), augmented and reinforced by units from the Marine Reserve.

Additional details on the land force structure are provided later in this section and are summarized in Table IV-1.

Military Operations Other Than War

Although the primary purpose of U.S. land forces is to contribute to winning the nation's wars, they are also prepared to conduct a range of operations short of war. These missions, which are becoming more common in the post-Cold War era, include peace enforcement and peacekeeping, humanitarian assistance and disaster relief, evacuations of U.S. citizens from crisis regions, counterdrug operations, and assistance to law enforcement agencies during civil disturbances. Although considered nontraditional, these operations, in fact, have a long heritage in U.S. military history and contribute directly to the security of the United States and its allies. For example, U.S. land forces are playing a key role in the Bosnian peacekeeping operation undertaken by NATO in December 1995. U.S. land forces also continue to be deployed in Haiti, where they are helping to ensure the restoration of democracy; they also are supporting peace enforcement and peacekeeping operations in locales such as the Former Yugoslav Republic of Macedonia. The forces required for operations other than war normally are subsumed within those needed for MRCs. However, some tailoring of normal force groupings plus special training often are needed.

Force Structure

The FY 1996 budget continues the transition to a force structure supporting the two-MRC strategy defined in the Bottom-Up Review.

ARMY

In 1997, the Army will consist of four corps and 18 active and reserve divisions, down from five corps and 28 divisions at 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 475,000 to 495,000 in FY 1999. (The FY 1999 objective will be established later this year, following completion of internal analyses and evaluations.) The 10 active divisions will include one airborne, one air assault, two light infantry, and six heavy (armored and mechanized) divisions. As FY 1996 began, active-duty strength numbered 510,000.

Army reserve components -- the Army National Guard and the U.S. Army Reserve -- will continue to perform critical warfighting functions that they have fulfilled in the past. The 15 enhanced readiness brigades of the ARNG are fully incorporated into planning for two MRCs. Further, more than 60 percent of the combat support and combat service support required by active Army forces will come from the reserve components. Other ARNG forces, such as the eight National Guard divisions, will be maintained at readiness levels that allow them to mobilize in the event of an extended crisis or protracted operation. These forces also provide a deterrent hedge against the long-term resurgence of a global threat. All reserve forces, but particularly those from the ARNG, will play dominant roles in disaster relief operations in the United States. Consistent with the change in strategic requirements, total end-strength in the

Army reserve components will decline from 736,000 in FY 1990 to 575,000 by FY 1998. At the beginning of FY 1996, Army reserve component end-strength stood at 630,000.

MARINE CORPS

The Marine Corps will maintain three active divisions, three active aircraft wings, and three active force service support groups (FSSGs), all task organized into three Marine Expeditionary Forces (MEFs). The MEF in the western Pacific will be somewhat smaller than in the past, however. Active Marine Corps end-strength has declined from 194,040 in FY 1991 to 174,000 today. The Marine Corps Reserve will maintain a division-wing-FSSG team to augment and reinforce the active force. Marine Corps Reserve end-strength today stands at 42,000, down from 44,900 in FY 1991.

By FY 1999, the drawdown in Army and Marine Corps force structure to levels consistent with the BUR will be complete. Table IV-1 summarizes the planned FY 1999 force structure for the Army and Marine Corps.

Table IV-1

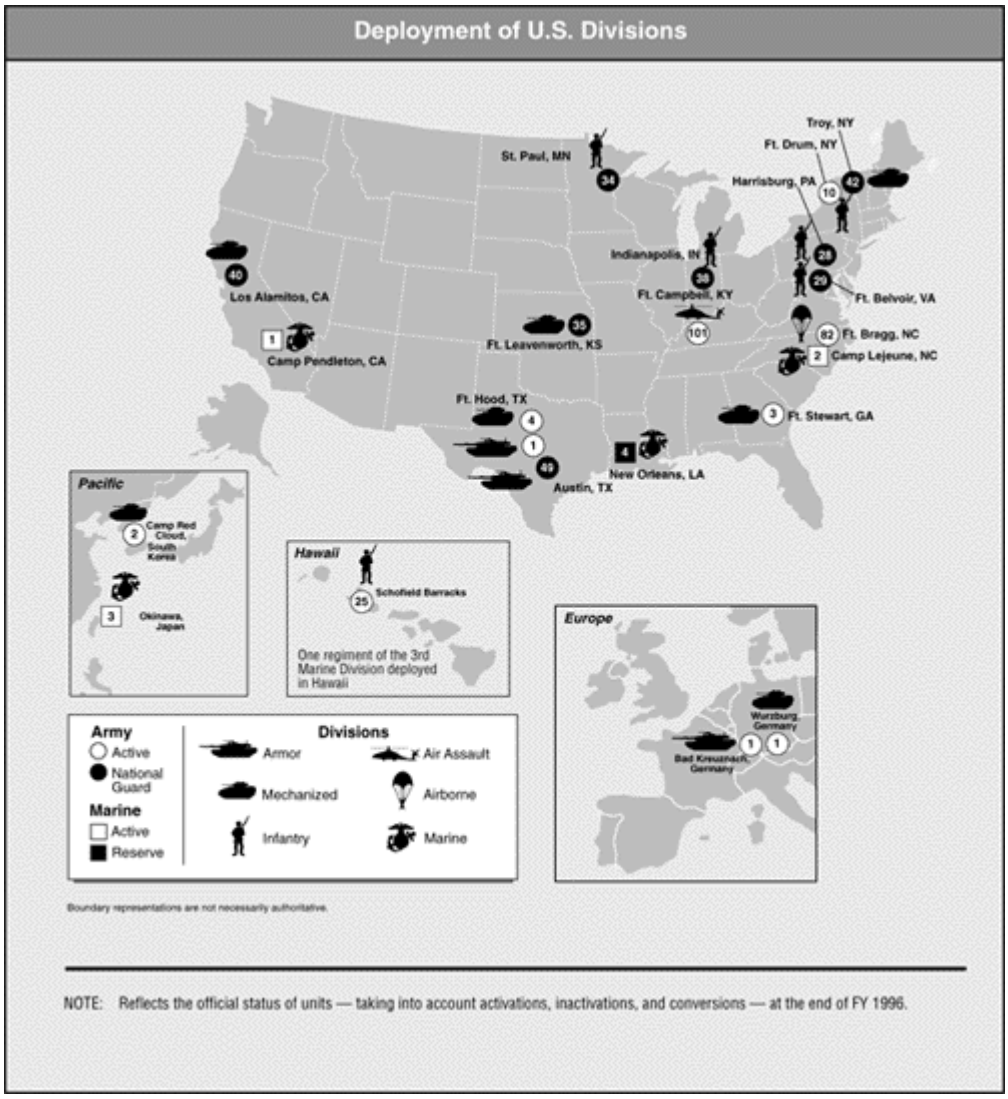
Army and Marine Corps
Force Structure and End-Strength

	Objective (FY 1999)
Army	
Active Component	
Divisions	10
Separate brigades and armored cavalry regiments	3
End-strength [a]	475,000-495,000
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 1996.



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 is committed to fulfilling a significant role in the North Atlantic Treaty Organization. A corps headquarters and substantial elements of two Army divisions, including support elements, will be retained in Europe. These forces will provide an aggregate troop strength of 65,000. Two brigade sets of Army equipment will remain prepositioned in central Europe; one brigade set will remain in southern Europe. This materiel will allow in-place

divisions to grow to full strength and an additional Army division to be deployed to the theater in the event of a conflict.

Despite the overall reduction of forces in Europe, the units remaining in the theater are very active. The U.S. Army's 1st Armored Division, drawn from U.S. NATO forces in Germany, is providing the bulk of U.S. ground forces for the NATO peacekeeping mission in Bosnia and Herzegovina. Further, the U.S. European Command is deeply involved in forging links with the states of Eastern Europe and the former Soviet Union through the Partnership for Peace and other programs.

Marine forces also maintain an active presence in Europe. A Marine Expeditionary Unit is continually deployed in the Mediterranean Sea; a Marine brigade-equivalent set of equipment has been prepositioned ashore in Norway; and another brigade-equivalent set has been placed aboard maritime prepositioning ships (MPS) stationed in the Mediterranean Sea. It was a forward-deployed MEU, operating as part of a joint task force, that rescued Air Force Captain Scott O'Grady last year when his aircraft was shot down over Bosnia and Herzegovina.

NORTHEAST ASIA AND PACIFIC REGION

The Army Second Infantry Division -- with two brigades plus other Eighth Army supporting elements and a total troop strength of over 27,000 -- will be maintained in South Korea to deter aggression from the north. The Army 25th Infantry Division (Light), stationed in Hawaii, is also oriented to the Pacific region, as is an Army special forces battalion maintained on Okinawa. In addition, prepositioned equipment is maintained ashore in Korea for one Army brigade. The Third Marine Division (one regiment of which is stationed in Hawaii) will remain on Okinawa, and one MPS squadron with a Marine brigade-set of equipment will continue to be 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 that will deploy to the region on a rotational basis to train and exercise with Kuwaiti forces. The second set will be located in Qatar. In addition, one brigade set of Army equipment will be prepositioned afloat, for use in either Southwest Asia or elsewhere as needed. One MPS squadron with a Marine brigade-set of equipment will be maintained in the region.

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 whom readiness depends. Education and training are major contributors to readiness and will continue to receive close attention. DoD has been very responsive to the needs of the combatant commanders in providing trained and educated forces, and it has put a robust process in place to improve its position 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 exercise 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 relative emphasis on simulators for basic and collective training continues to increase as computer hardware and software technology improve.

Army Training

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, Kansas, 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 Training

Marine units conduct large-scale live-fire and maneuver field exercises at the Marine Corps Air-Ground Combat Center at 29 Palms, California. Eight active and two reserve infantry battalions, plus associated combat support and combat service support elements, train each year in MAGTF-level exercises. The Mountain Warfare Training Center in Bridgeport, California, prepares Marine units for both mountain and cold-weather operations. Marine Expeditionary Units (Special Operations Capable) undergo an intense, 26-week predeployment training period, during which they receive extensive training both ashore and at sea.

Joint and Multinational Training

Army and Marine forces participate in joint and multinational training exercises both in the United States and abroad. Joint exercises involve forces of more than one military department; multinational exercises involve forces of foreign nations. Both are critical in developing and honing procedures for mutual support, seamless integration, and unified command and control. Major exercises in 1995 included Unified Endeavor at Fort Hood, Texas; Roving Sands at Fort Bliss, Texas; Bright Star 95 in Egypt; Cobra Gold 95 in Thailand; Indigo Desert in Kuwait; Ulchi Focus Lens 95 in Korea; and Fuertes Caminos in South America.

Training Challenges -- Funding

Crisis-response operations continue to be a significant responsibility for land forces and bear directly on readiness. These deployments, coupled with routine overseas presence missions, place heavy strains on the already limited operation 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 long-term method of funding contingencies that does not harm readiness. In the short term, to ease burdens on the active force, reserve units are being used in peacekeeping roles in Haiti and the Sinai. In addition, congressional passage last year of a $2.5 billion emergency supplemental appropriation for contingencies provided much-needed relief. The land forces component of these funds was $1.1 billion; the supplemental allowed Army and Marine Corps commanders to avoid abbreviating and curtailing field exercises in order to fund contingency operations out of operation and maintenance accounts.

MODERNIZATION

Modernization programs for the Army and Marine Corps lay the technological groundwork for longer-term enhancements in combat power and preserve the combat edge that U.S. land forces now possess over potential adversaries. Retention of this edge is vital if U.S. forces are to prevail in the shortest possible time and with the fewest possible casualties.

The sections that follow present highlights of modernization programs being pursued by the Army and Marine Corps. As this report went to press, funding needed to support recapitalization initiatives of all four Services was under review. Annual production rates and funding objectives for some programs addressed in this chapter could change as a result of that assessment. Moreover, other changes could be made as a result of subsequent reprogramming requests. The figures given here reflect the status of programs at the time of the report's publication; adjusted figures, where applicable, will be included in the President's budget submission to Congress.

Army

The Army strategy for waging war is to win rapidly with minimum casualties by denying an 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 continue to emphasize five interrelated areas where U.S. forces must maintain a combat edge: battlefield intelligence and communications; precision strike; battlefield maneuver; force protection; and force projection and sustainment. To achieve these objectives, 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.

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 protection system, and improved armor. Battlefield performance is being 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 permitting the rapid transfer of data between the Abrams and other systems on the battlefield. The M1A2 upgrade program began in FY 1993. To date, 206 upgrades have been funded. The Army currently plans to award a five-year contract beginning in FY 1996 for at 600 additional upgrades.

BRADLEY FIGHTING VEHICLE UPGRADE

The A3 upgrade to the Bradley fighting vehicle system will complement the capabilities provided by the M1A2. Approximately 1,602 existing Bradley A2s will be remanufactured into A3s. In addition to providing digital communications capability, enhanced situational awareness, and improved sustainability, the A3 upgrade increases the lethality 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 A3 upgrade will continue through FY 1999. Low-rate initial production is scheduled to begin in FY 1997.

COMANCHE HELICOPTER

The Comanche (RAH-66) is the first helicopter designed for armed reconnaissance. This aircraft will allow Army commanders to pass near real-time intelligence to soldiers throughout the battlefield. It will significantly expand the Army's ability to locate enemy forces, mass fire against them in close and deep tactical operations, and synchronize Army actions throughout the land component commander's area of operation. The Comanche will replace three aging helicopter systems -- the AH-1, OH-58, and OH-6. The AH-1, OH-58A/C, and the OH-6 fleets all average more than 25 years of age and lack the capabilities needed on the 21st century battlefield. The younger OH-58D is not capable of handling modern payloads. The Comanche will continue in research and development during the program years. Current plans call for procurement to begin in FY 2006, with a total of 1,292 helicopters slated for production through FY 2027.

APACHE LONGBOW AND LONGBOW HELLFIRE MISSILE

This modification to the Apache system will provide ground commanders with a long-range helicopter 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 millimeterwave radar to direct a fire-and-forget version of the Hellfire II missile. Initial operational tests and evaluation of the Longbow system were conducted early in 1995, and the system was approved for production in October 1995. Current plans call for 758 Apache helicopters to be converted to the Longbow configuration through FY 2008.

ARMY TACTICAL MISSILE SYSTEM (ATACMS)

ATACMS is a surface-to-surface guided missile capable of striking targets beyond the range of existing Army cannons and rockets. This advanced weapon is fired from the M270, which also is the delivery vehicle for the Multiple-Launch Rocket System (MLRS). ATACMS Block I missiles, with antipersonnel/antimateriel (APAM) bomblets, were fielded beginning in FY 1990. An improved version of the weapon, designated ATACMS Block IA, with greater range and accuracy, will enter service in FY 1998; a total of 800 of these missiles are programmed for production. Two follow-on versions of ATACMS are scheduled for fielding after the turn of the century. ATACMS Block II missiles, carrying the Brilliant Antiarmor Technology submunition (discussed below), will enter service in FY 2001; an inventory objective of 1,206 missiles has been established for this variant. In FY 2003, the extended-range ATACMS Block IIA will be fielded; a total of 600 of these missiles are planned for procurement.

BRILLIANT ANTIARMOR TECHNOLOGY (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 ATACMS. Once released, BAT will use infrared and acoustic sensors to autonomously locate and automatically attack moving armored vehicles. BAT will begin contractor developmental testing in FY 1996 and start low-rate initial production in FY 1998.

SADARM will be delivered to its target by 155mm artillery projectiles. The submunition is designed to destroy lightly-armored vehicles, primarily self-propelled artillery. Once dispensed from its carrier, SADARM will locate 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 in FY 1998. A decision on full-rate production will be made in FY 1999. Current plans call for procurement of 73,532 projectiles (with two SADARM submunitions per projectile) through FY 2012. A fully funded product improvement program for SADARM will increase the submunition's footprint and lethality through improved electronics; the product-improved version will enter production in FY 2002.

JAVELIN

This new man-portable missile system will improve the antiarmor capability of dismounted Army and Marine forces. It is slated to 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.

CRUSADER

The Crusader (formerly designated the Advanced Field Artillery System and Future Armored Resupply Vehicle) is a new-generation self-propelled indirect-fire cannon and artillery resupply system. It will replace the M109A6 Paladin self-propelled howitzer and the M992 field artillery

ammunition supply vehicle used by heavy Army forces. Compared to those earlier systems, Crusader will provide a significant increase in range, accuracy, rate of fire, mobility, and survivability, restoring the Army's cannon artillery supremacy. Innovations incorporated in the system include an advanced cannon system, automated ammunition handling, and improved fire control capabilities. Crusader will be in research and development during the program years; production is scheduled to begin in FY 2003, with the first unit to be equipped in FY 2005. Current plans call for the procurement of 824 Crusader systems (824 cannons and 824 resupply vehicles) through FY 2012.

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 new truck lines will overcome several significant aging problems. The current fleets of 2 1/2-ton and 5-ton trucks are now more than 20 years old and will average more than 30 years in age by the end of FY 2001. The reliability problems, and particularly the limited off-road capability, of these vehicles were documented in the Gulf War. FMTV will have much greater off-road mobility and will be much easier to maintain than the systems it will replace. Current plans call for delivery of 53,600 FMTVs through FY 2015.

DIGITIZATION

This group of programs -- including but not limited to the Army Digitization program, Army Global Command and Control System, and Army Tactical Command and Control System -- will modernize Army command and control systems. The primary goal of this major research and development initiative is to provide digital communications links between commanders and their forces, and among individual force elements, enabling information to be passed around the battlefield in near real time. The program's broader goal is to improve situational awareness and decision support for commanders in the field. As part of this initiative, communications systems are being upgraded to carry the immense amounts of digital information that will have to be processed, and to give them the computer hardware and software to do that. The various systems included in this initiative will be field tested through the year 1999; a decision on full procurement will be made in FY 2000.

Marine Corps

Marine Corps modernization requirements derive from the operational maneuver from the sea concept, which provides for amphibious assaults to be launched further offshore, with greater survivability, flexibility, speed, surprise, and combat power. Initiatives that improve amphibious and aerial assault capability, land mobility, mine countermeasures, and fire support capabilities are essential to this concept.

V-22 OSPREY

This tilt-rotor aircraft will replace the Marine Corps' aging fleet of CH-46E and CH-53A/D 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 deeper within the area of operations. This improvement in mobility will also enhance the survivability of ships carrying the aircraft. Amphibious vessels will be able to remain further offshore, 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, with low-rate production scheduled to begin in FY 1997. A decision on full-rate production will be made in FY 2001. Current plans call for the procurement of 523 aircraft through FY 2021, including 50 aircraft modified for special operations. Initial operational capability is anticipated in FY 2001.

UTILITY AND ATTACK HELICOPTER UPGRADES/ REPLACEMENTS

The Marine Corps is examining alternatives for upgrading or replacing its aging fleet of utility and attack helicopters. Alternatives include the addition of improved four-blade lift capabilities to both helicopter fleets, the incorporation of an improved targeting system and an integrated weapons station on the AH-1W, and various replacement options. The program will undergo an acquisition milestone review in late FY 1996, at which time a decision on proceeding into demonstration/validation will be made.

ADVANCED AMPHIBIOUS ASSAULT VEHICLE (AAAV)

This new amphibious assault vehicle will allow Marine forces to launch assaults from points 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. The AAAV will replace the AAV7A1, which dates from the early 1970s and is nearing the end of its service life. The AAAV will have much greater mobility in the water than the AAV7A1, and will have the speed and cross-country mobility to operate with the M1A1 tank. Currently, two contractors are working to define AAAV concepts. Development will proceed under a demonstration and validation contract to be competitively awarded in early 1996. A low-rate initial production contract is scheduled to be awarded in FY 2004; 1,013 vehicles are planned for procurement through FY 2013.

LIGHTWEIGHT 155 HOWITZER (LW155)

This new towed cannon system will replace the M198 155mm howitzer used by Army and Marine forces. Substantially lighter than the M198, the LW155 will significantly enhance ship-to-shore mobility, while increasing the survivability and responsiveness of artillery support for ground operations. The requirements for this joint program were defined in the first half of 1995, at which time concept definition activities were initiated. Upon completion of a shoot-off among competing systems during 1996, the program will enter the engineering and manufacturing development phase. An acquisition objective of 598 LW155s has been established. Low-rate production is scheduled to begin in FY 2000, with full operational capability slated for FY 2006.

PREDATOR SHORT-RANGE ASSAULT WEAPON

This short-range antiarmor assault weapon will improve Marine light antitank capability in the field. A shoulder-mounted, 20-pound fire-and-forget system, the Predator will improve upon the range and lethality of the AT4, which it is slated to replace. The current acquisition target is

21,012 systems. Operational requirements were established in 1994, and the program is currently in engineering and manufacturing development. Procurement is scheduled to start in FY 1999, with full operational capability planned for FY 2001.

Table IV-2

Key Army and Marine Corps Modernization Programs

	Current Dollars (Millions)			
	FY 1995 Actual	FY 1996 Actual	FY 1997 Budgeted	FY 1998 Planned
Army RDT&E				
Abrams Upgrade	11.7	38.8	71.5	33.3
Bradley Upgrade	75.1	117.9	89.2	66.3
Comanche	474.9	292.2	288.6	288.8
Apache Longbow	169.6	23.0	5.9	--
ATACMS/APAM	36.3	26.4	4.9	--
ATACMS/BAT	115.1	195.7	180.4	177.7
SADARM	40.5	16.2	10.1	22.6
Javelin	29.6	1.0	--	--
Crusader	172.4	201.6	267.9	337.6
FMTV	4.3	--	--	--
Digitization	82.7	99.1	87.4	27.8
Army Procurement				
Abrams Upgrade	308.7	496.7	539.8	650.6
Bradley Upgrade	--	--	210.2	221.4
Apache Longbow	117.0	417.7	379.5	439.0
ATACMS/APAM	112.8	121.3	92.8	98.1
ATACMS/BAT	--	--	--	120.9
SADARM	29.8	41.1	60.3	69.5
Javelin	212.6	200.9	162.1	152.3
FMTV	371.2	150.8	240.0	135.3
Digitization	--	--	--	75.6
Navy RDT&E [a]				
V-22	452.7	736.8	576.8	522.7
Helicopter Upgrades/ Replacements	89.0	87.0	113.1	145.3
Navy Procurement [b]				
V-22	--	46.6	602.3	522.7
Marine Corps RDT&E				
AAAV	23.6	32.4	41.3	62.4
LW155	6.4	10.9	11.5	31.3
Short-Range Assault Weapon	17.3	31.5	33.3	0.5

NOTES:
[a] Navy funds applied to Marine Corps RDT&E.
[b] Navy funds applied to Marine Corps procurement.

MEDIUM TACTICAL VEHICLE REMANUFACTURE (MTVR)

Under this program, the Marine Corps is remanufacturing 5-ton trucks used by combat, combat support, and combat service support units to move troops, equipment, and sustainment supplies. The current fleet will begin to reach the end of its service life in FY 1999; its limited mobility and load-carrying capacity were demonstrated during the Gulf War. In upgrading the fleet, the remanufacturing program will emphasize modern, nondevelopmental off-road truck technologies. Planned enhancements include the installation of an improved engine, independent suspension, and central tire inflation system. Plans call for a total of 8,080 vehicles to be remanufactured through FY 2004.

Additional modernization programs for the Marine Corps are discussed in the Maritime Forces section of this report.

CONCLUSION

Both the Army and Marine Corps will take additional steps in FY 1997 to streamline and adapt their forces to post-Cold War requirements. The FY 1997-2001 program will preserve combat readiness, while making 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 approach to meeting future needs.

Chapter 19

MARITIME FORCES

INTRODUCTION

Maritime forces -- the Navy and Marine Corps -- play a critical role in America's defenses. Deployed continuously in regions vital to U.S. interests, these forces provide a rapid means of responding to crises, while helping to deter aggression against the United States, its allies, and friends.

Acting independently or as part of joint military operations, maritime forces perform a full range of missions, from supporting humanitarian relief efforts to prosecuting major regional conflicts (MRCs). In times of crisis, they enable the United States to control access to and use of the sea; to bring military power rapidly to bear against naval, air, or land targets from points far at sea or close to shore; and to insert and support ground forces, as necessary. In MRCs, where they could provide the first U.S. response, maritime forces deliver early and strong combat power, while supporting the deployment of follow-on forces. Key to their effectiveness in these diverse roles is the ability of maritime forces to sustain themselves in forward locations for prolonged periods and to operate independent of foreign basing and overflight rights.

The lethality, adaptability, and independence of maritime forces make them well-suited to post-Cold War needs. As demonstrated during the Gulf War, maritime forces complement land-based air and ground forces in carrying out the U.S. military strategy.

Recognizing the importance of these contributions, the FY 1997 budget and associated Future Years Defense Program (FYDP) provide resources to improve the caliber of U.S. maritime forces, both people and equipment. The budget preserves combat readiness while continuing the quality of life enhancements initiated last year. At the same time, the budget recognizes the need to replace aging elements of the fleet while modernizing specific combat systems in response to emerging threats. Thus, the core elements of the recapitalization plan submitted last year are sustained in the FY 1997 budget, with appropriate adjustments to reflect congressional action on the FY 1996 request and other developments. The modernization programs planned for FY 1997-2001 will result in ready, technologically advanced maritime forces able to meet the diverse challenges that lie ahead.

MISSIONS

Consistent with the post-Cold War military strategy defined in the 1993 Bottom-Up Review (BUR), maritime missions now focus on regional, as opposed to global, threats. The primary mission of maritime forces remains to deter aggression against the United States, its allies, and friends. A second mission -- forward presence -- serves as a link between deterrence and regional contingencies. Through routine deployments in forward areas, maritime forces promote stability and help to deter conflicts, while enhancing capabilities for joint operations with other U.S. and allied forces. Should crises arise, forward-deployed ships, aircraft, and Marine Air-Ground Task

Forces provide rapid-response capabilities that can prevent tensions from escalating and more dangerous conflicts from erupting.

Forward deployments play a pivotal role in the U.S. defense strategy. Maritime forces, either on the scene at the outset of a crisis or arriving shortly thereafter, can serve to deter potential aggressors from taking hostile action. These forces also provide critical capabilities at the earliest junctures of a conflict. Recent wargames and analyses have shown that the early introduction of maritime forces can be crucial to the outcome of conflict scenarios. The timely arrival of these forces can influence whether an aggressor can be contained early in a crisis, before the situation deteriorates to a level requiring a more massive response.

Given the post-Cold War emphasis on regional conflicts, maritime forces now concentrate heavily on coastal, or littoral, operations. Such operations could include the projection of power from the sea, either as part of a limited strike using carrier-based aircraft or Tomahawk cruise missiles or as a component of a full-scale amphibious assault. In addition, maritime forces must maintain control of the sea in order to pursue other objectives, including support of land operations. Finally, for the successful prosecution of any conflict, maritime forces must utilize space-based reconnaissance assets, electronic warfare, and other intelligence assets to provide timely information about an aggressor's activities, and deny the same advantages to the enemy.

To fulfill these diverse and difficult responsibilities, maritime forces train for tasks ranging from air, surface, and undersea warfare to land attack. Additionally, these forces participate in numerous exercises with other U.S. and allied forces. These activities enhance combat proficiency, while strengthening capabilities for joint operations.

In 1995, the Navy and Marine Corps (both active and reserve elements) participated in operations spanning the full range of naval missions. Teamed with other U.S. and allied forces, maritime forces provided continued support for UN operations in Southwest Asia and the Balkans. The missions of these forces included enforcing no-fly zones, undertaking maritime interdiction operations, and in Bosnia and Herzegovina, conducting air and Tomahawk missile strikes against Serbian ground targets. Maritime forces also provided support for humanitarian operations conducted by the United Nations in Iraq and Bosnia and Herzegovina, and contributed to relief efforts for communities damaged by hurricanes in the Caribbean and southeastern United States. Maritime forces also played a key role in operations to counter drug traffic in the southern approaches to the United States, and they participated in numerous multinational exercises.

THREATS

U.S. forces could face serious challenges when conducting contingency operations in littoral areas. Potential threats include:

- Antiship Cruise Missiles (ASCMs). Increasingly available throughout the world, these sophisticated, relatively inexpensive weapons can be launched from the air, sea, or land. The limited time available to react to them, once airborne, could pose difficulties for existing antiair defenses, particularly in littoral operations, where naval forces may be

patrolling very close to the shore or in physically-constrained bodies of water. A number of countries in regions vital to American interests, including the Persian Gulf, now possess advanced ASCMs.

- Weapons of Mass Destruction/Tactical Ballistic Missiles. The proliferation of these weapons further increases the risk to forces operating in littoral areas. Currently, more than 20 countries are working to acquire a chemical weapons capability and more than 10 countries have active biological weapons programs. At least 20 countries will have the capability to deliver nuclear, chemical, or biological weapons by the year 2000. These weapons pose a direct threat to landing forces and port operations.
- Naval Mines. Mines provide perhaps the most attractive way to delay, or even deny, accomplishment of U.S. maritime objectives. These weapons are generally inexpensive, easy to store and conceal, and rapidly deployable. They range in type and capability from primitive moored, contact mines to sophisticated bottom mines, which are difficult to detect and counter and are triggered by acoustic or magnetic signatures of passing ships. During the Gulf War, Iraq employed a number of mines of varying type, and did so successfully enough to damage two ships seriously and complicate plans for an amphibious landing. Most littoral states possess at least a rudimentary mine capability, offering the possibility of a mine threat in any contingency.
- Diesel-Electric Submarines. These undersea forces constitute a growing threat, one that can be difficult to detect and defend against in shallow water. Uncountered, these submarines can disrupt shipping and shut down vital sea lanes in littoral areas. Many navies now operate diesel subs, and additional countries could well follow suit.

In recognition of these and other emerging threats, the FY 1997 budget and FYDP provide the equipment and training necessary to counter potential regional adversaries and ensure the effective performance of U.S. maritime missions.

FORCE STRUCTURE AND CAPABILITIES

The maritime force structure includes Navy ships, aircraft, and shore elements, along with Marine Corps air and ground forces. Major categories of ships in the force include aircraft carriers, attack submarines, surface combatants, amphibious ships, mine warfare ships, and ballistic-missile submarines (discussed in the Strategic Nuclear Forces chapter). Augmenting these ships are various other vessels that perform support and logistical functions. These auxiliary ships enable maritime forces to remain on patrol for extended periods, with little or no shore support. The aviation component of the force consists of Navy and Marine tactical aircraft, land-based maritime patrol aircraft, sea-based helicopters, and various support aircraft. (Tactical aircraft are discussed in the Aviation Forces chapter.) Shore elements supporting maritime operations range from command centers to port repair facilities. Marine forces, stationed on land and at sea, provide a rapid means of projecting U.S. combat power in response to fast-breaking crises. These forces are specially trained and equipped for expeditionary operations ranging from personnel evacuations to amphibious assaults.

As explained below, the maritime force structure is driven predominantly by the need to maintain forward presence and to perform a wide range of peacetime and crisis response operations. The force structure also supports the BUR warfighting strategy, which calls for the

ability to prosecute two major regional conflicts nearly simultaneously. To that end, the BUR set an FY 1999 warfighting objective of 10 aircraft carriers and about 45 attack submarines within an overall force goal of 346 ships.

As explained in the BUR, maritime forces would play a critical role in each of the four phases of an MRC:

- Halting the Invasion. Routinely on patrol in foreign waters, maritime forces could be among the first U.S. forces to respond in a regional conflict. Operating from the sea or points closer to shore, they could deploy carrier-based aircraft, Tomahawk missiles, and naval surface gunfire against advancing land forces. In tandem with land-based air and ground forces, maritime forces would secure dominance of the air and sea. If necessary, they could also launch and support forcible-entry operations.
- Force Buildup. Maritime forces would support preparations for a ground counteroffensive by continuing attacks against enemy targets and by ensuring the safe arrival of sealift ships. Establishing and maintaining control of the sea is critical to the effective performance of the latter task.
- Counteroffensive. Maritime forces could conduct amphibious operations or sustained combat ashore as part of a major land campaign. Ships and aircraft would support the sea-based assaults, as well as operations conducted further inland.
- Ensuring Postwar Stability. Following the cessation of hostilities, some maritime forces would remain in the theater to protect the peace and deter further aggression. As in the aftermath of the Gulf War, these forces could be called on to undertake a variety of missions, such as enforcing trade embargoes and no-fly zones.

Beyond setting wartime requirements, the BUR reaffirmed the need for maritime forces to conduct routine peacetime deployments. Accordingly, the force structure includes one additional active carrier -- beyond the wartime requirement -- to meet peacetime needs, plus an operational reserve carrier to support training requirements and undertake limited deployments. This yields a total force of 12 carriers -- 11 active and one reserve. To meet near-term presence demands in addition to warfighting requirements, the BUR determined that a force of 45-55 attack submarines would be required through FY 1999. Assessments and programming decisions subsequent to the BUR have modified the projected fleet size to about 330-346 ships by FY 2001; the range provides flexibility for future programming decisions regarding primarily the surface combatant force.

The Navy deploys one carrier battle group (CVBG) and one amphibious ready group (ARG) with an embarked, special operations-capable Marine expeditionary unit on a nearly continuous basis in three separate theaters: the western Pacific, the Mediterranean, and the North Arabian Sea. Thus, at any given time, roughly three CVBGs and three ARGs are on patrol in forward areas. In the event that neither a CVBG nor an ARG were near the scene of an unfolding crisis, an equivalent force could be deployed to the vicinity on short notice.

Maintaining a continuous CVBG presence in each theater would require a force of 14 aircraft carriers; current policy, however, provides for somewhat less than continuous presence in each theater. Thus, a carrier battle group will operate in a theater for part of a year. During the

remainder, a CVBG would be a few days away, or tethered to that theater. The current policy of tethered presence is supportable by a force of 11 active carriers.

While the fundamental building blocks of the maritime force structure remain CVBGs, ARGs, and Marine expeditionary forces (MEFs), these force elements do not simply mirror their Cold War counterparts. As described in last year's report, changes have taken place in both the structure and the employment of maritime forces. Due largely to their inherent flexibility, maritime units can be employed in varying combinations and can undertake missions in conjunction with other forces, depending on the needs of a given operation. A noteworthy example was the deployment of Army troops to Haiti aboard the aircraft carriers USS America and USS Eisenhower during the 1994 Operation Uphold Democracy. Forces will continue to be tailored in the future to meet the needs of specific operations.

Given the policy of tethered presence, the maritime force planned for FY 1997 and beyond provides an adequate rotation base for peacetime deployments, while maintaining contingency forces in a sufficient state of readiness to deploy in a matter of days. These forces could be employed in any conflict, with four to five carrier battle groups and one to two MEFs available to support operations in a single MRC.

Force Structure

In FY 1996, the maritime force structure will include the following:

Table IV-3

1996 Force Levels	
Ballistic-Missile Submarines	17
Aircraft Carriers	11/1
Attack Submarines	80
Surface Combatants	115/10
Amphibious Ships	42/2
Mine Warfare Ships	11/5
Logistic Force Ships	65
Total Battle Force Ships	359
NOTE: Entries with two numbers separated by a slash give active followed by reserve force counts.	

Reflecting the post-Cold War drawdown of forces, the U.S. battle force, constituting 359 ships in FY 1996, will decline to between 330 and 346 ships in FY 2001. The range reflects uncertainty over the number of active surface combatants in service at the end of the FYDP. This smaller but modernized force will provide the capabilities necessary to accomplish BUR warfighting and peacetime presence objectives. The mix of ships will change, however, relative to today's structure. By the end of the FYDP, the Navy will have reduced its attack submarine force to fewer than 55 ships, down from 80 in FY 1996. Conversely, the Navy may retain in the force an

as-yet-undetermined number of guided-missile frigates now scheduled for early retirement. These plans are discussed in greater detail in the Modernization section.

Capabilities

Maritime forces provide capabilities for a broad range of military operations, from peacetime presence to crisis response to major conflicts. Deployed independently or as part of a joint force, maritime ships and aircraft fulfill command and control functions, maintain dominance over the battle area, project combat power ashore, and contribute to the sustainment of deployed forces.

COMMAND, CONTROL, AND SURVEILLANCE

The successful conduct of military operations relies heavily on the collection and dissemination of information. Maritime forces possess extensive command, control, communications, computer, and intelligence (C4I) capabilities exploitable from space, sea, or land. Onboard high-capacity, multimedia communications allow joint force commanders to receive information from both centrally-managed national and joint support systems and from tactical surveillance systems such as maritime patrol aircraft, carrier-based aircraft, submarines, and surface combatants. Surveillance systems for maritime forces permit near real-time delivery of data in support of joint operations. Conversely, command and control warfare systems deny the effective employment of similar capabilities by an opposing force.

BATTLESPACE DOMINANCE

Successful maritime operations require control of the sea and the surrounding airspace. Equally critical in littoral areas, maritime forces must be able to deny an adversary access to the sea. U.S. maritime forces are well-equipped to execute these tasks: aircraft carriers with their air wings, as well as Aegis-equipped surface combatants, maintain air superiority and protect neighboring airspace, while submarines, surface combatants, maritime patrol aircraft, and mine warfare forces provide additional capabilities to control the surface and undersea environments.

POWER PROJECTION ASHORE

Consistent with the warfighting strategy detailed in the BUR, maritime forces must be capable of securing the sea and projecting lethal firepower ashore, either in support of initial operations or as part of a larger counteroffensive. Carrier-based aircraft and cruise missile-equipped surface ships and submarines provide this firepower. Marine expeditionary forces, embarked on amphibious ships or supported ashore from maritime prepositioning ships, extend the landward reach of littoral power-projection operations. Taken together, naval strike and expeditionary warfare forces can mass firepower and ground maneuver units to spearhead joint or multinational operations.

FORCE SUSTAINMENT

The decline in overseas bases increases the value of maritime force sustainment capabilities. A comprehensive logistics 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, afloat prepositioning ships, maintained continuously on station near potential trouble spots, carry equipment and supplies for U.S. troops who would deploy in a crisis. Finally, sealift forces deploying from the continental United States would deliver additional combat and support elements. Combat logistics support forces thus contribute not only to the sustainability of maritime forces, but to the deployment and operation of other U.S. forces. See the Mobility Forces chapter for details on maritime prepositioning and sealift ships.

READINESS AND SUSTAINABILITY

In order to accomplish their assigned missions, maritime forces receive regular and rigorous training. To maximize combat proficiency, peacetime deployments and associated operating tempos mirror potential contingency operations. Navy and Marine forces deploy on the ships they would use in war, to the places where war may break out, and with the weapons and equipment needed to win. Imperative to the successful prosecution of any future contingency is the retention of the high levels of readiness and competency demonstrated during recent operations. The FY 1997 budget accomplishes this goal.

The budget funds depot maintenance activities, munitions, spare parts, and other supplies at levels sufficient to sustain forces in two nearly simultaneous major regional conflicts. Average ship operating tempos, measured in steaming days per quarter, have remained identical to last year's levels for deployed ships. Steaming days for the nondeployed fleet have been reduced an average of two days per quarter relative to the level last year. These reductions have been made by consolidating exercises and training operations, thereby saving time devoted to transit and preparations. This will not adversely affect overall fleet readiness.

Table IV-4

Steaming Days per Quarter

	Nondeployed Fleet Units	Deployed Fleet Units
Atlantic	29 [a]	50
Pacific	25	51

[a] The higher tempo relative to Pacific forces reflects longer transit time to training areas and Caribbean operations.

Finally, the Navy has addressed a growing problem with the nondeployed operating tempo of Atlantic fleet surface combatants. Over the past few years, the combination of a reduced force structure, continued deployment requirements, and unforeseen contingencies has driven these ships' operating tempo above fleet averages. In response, the Navy has allocated 16 surface combatants to form a Western Hemisphere Group (WHG). These cruisers, destroyers, and frigates will be employed to meet specific Atlantic mission requirements, including counterdrug operations, refugee contingency missions, South American deployments, and opposition forces

for training exercises. With specific ships now allocated to these missions, battle groups scheduled for deployment can focus nondeployed steaming time on training. Although the ships of the WHG will not deploy routinely with battle groups, they can be utilized for contingencies in forward areas if needed.

During 1996, maritime forces will participate in approximately 175 major unit exercises, more than 90 percent of which will involve joint operations with other U.S. or multinational forces. These deployments improve the ability of maritime forces to conduct forward presence missions; they train U.S. forces to operate efficiently together; and they strengthen bilateral and multilateral security relationships with U.S. allies.

MODERNIZATION

The Navy continues to recapitalize its fleet consistent with the program objectives established last year. In general, the average age of the fleet is currently acceptable. However, some ship categories -- such as amphibious forces, logistics ships, and surface combatants -- are growing in age and are in need of replacement. Recapitalization addresses this need.

The Navy is modernizing those weapon systems, ships, and aircraft that will be retained in service through technology upgrades and life extension programs. These efforts address existing and projected shortfalls in capabilities to counter emerging threats.

The sections that follow present highlights of modernization programs for maritime forces. As this report went to press, funding needed to support the Department's recapitalization initiatives was under review. Annual production rates and funding objectives for some programs addressed in this chapter could change as a result of subsequent reprogramming requests. Moreover, other changes could be made as a result of subsequent reprogramming requests. The figures given here reflect the status of programs at the time of the report's publication; adjusted figures, where applicable, will be included in the President's budget submission to Congress.

Shipbuilding

The FY 1997 budget has been adjusted, relative to last year's plan, to reflect congressional action on the FY 1996 budget request. Highlights of the FY 1997-2001 shipbuilding program are presented in Table IV-5.

AIRCRAFT CARRIERS

Consistent with BUR objectives, the Navy will maintain a force of 12 aircraft carriers -- 11 active and one reserve -- throughout the FYDP period. By the end of the FYDP, the carrier force will consist primarily of Nimitz-class nuclear-powered ships. The Navy will take delivery of its next two carriers, CVN-74 and CVN-75, in FY 1996 and FY 1998, respectively. A third new carrier, CVN-76, authorized in FY 1995, will join the fleet in 2002. With CVN-76's delivery, only one conventionally-powered carrier -- the USS Constellation -- will remain in the active force. An additional conventionally-powered carrier, the USS Kennedy, will serve as an operational reserve and training ship, and will also be available for limited deployments. Specific

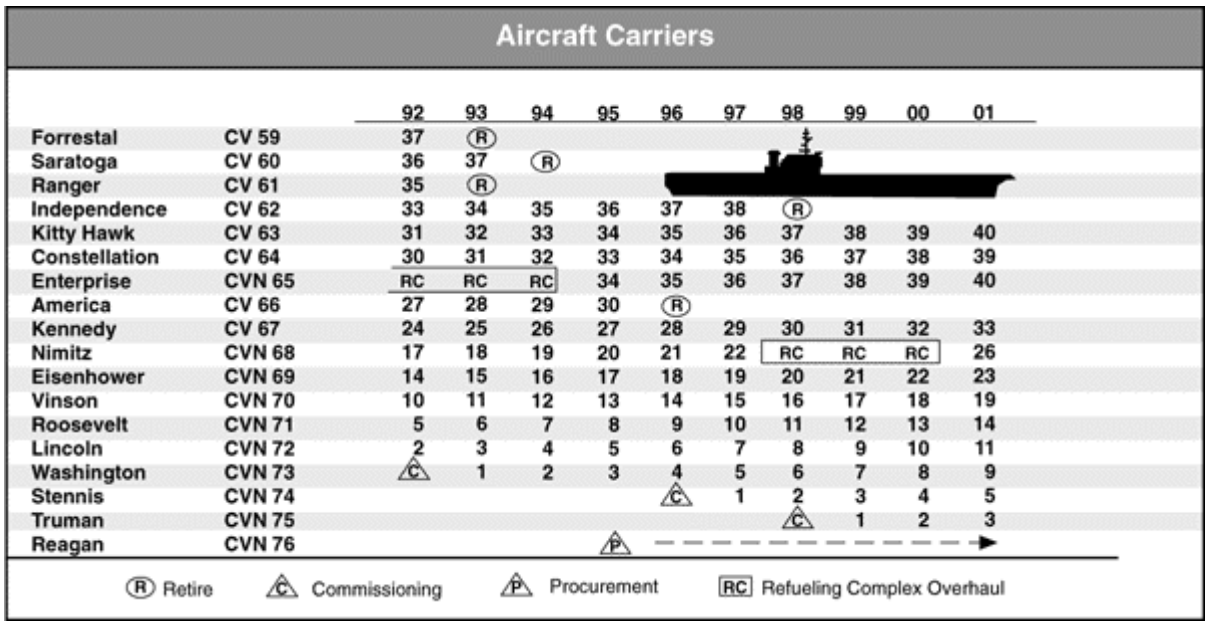
plans for aircraft carrier construction beyond CVN-76 await the completion of Navy studies. The future shipbuilding profile will reflect the need to replace the USS Constellation, as well as older nuclear-powered carriers, while maintaining a long-term force of 11 active carriers.

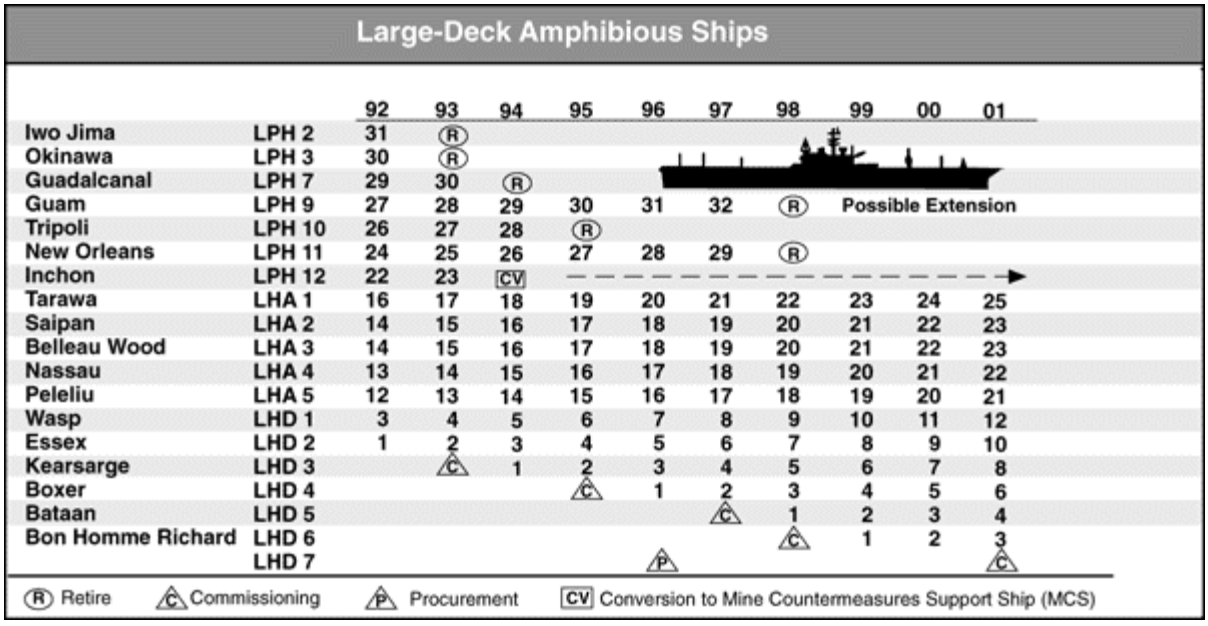
Table IV-5

FY 1997-2001 Shipbuilding Program

	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FYDP Total
New Construction						
Replacement Aircraft Carrier	0	0	0	0 [a]	0 [a]	0
SSN-23	0 [b]	0	0	0	0	0 [b]
NSSN (Attack Submarine)	0	1	1	1	1	4
DDG-51 (Guided-Missile Destroyer)	4	2	3	3	3	15
LHD-1 (Amphibious Assault Ship)	0	0	0	0	0	0
LPD-17 (Amphibious Transport Dock)	0	1	1	2	2	6
ADC(X) (Fast Combat Support Ship)	0	0	0	1	0	1
TAGS-60 (Oceanographic Research)	0	0	1	0	0	1
T-AGOS-23 (Ocean Surveillance Ship)	0	0	1	0	0	1
Conversions/Major Overhauls						
CVN-68 (Nimitz) Refueling Overhaul	0	1	0	0	1	2
AOE SLEP	0	0	1	0	0	1

[a] About $630 million is programmed as a down payment on a replacement carrier to be procured after FY 2001.
[b] About $807 million is needed to complete funding of the SSN-23, for which $700 million was appropriated in FY 1996.





AMPHIBIOUS SHIPS

The Navy maintains an amphibious fleet capable of lifting two and a half Marine brigade equivalents during wartime and sustaining roughly three forward-deployed MEUs in peacetime. To preserve that capability, the FY 1997 budget and associated FYDP will provide a force of 43 active and two reserve ships by FY 2001. The active vessels include 41 lift ships (two of which are maintained in reduced operating status) and two command ships. A large number of vessels in the fleet have been in service for almost 30 years and are nearing the end of their projected lives. This fact is reflected in the rising age of the fleet, which averages 18 years in FY 1996, growing to 21 years by FY 2001. Modernization programs for amphibious forces therefore have

the dual goals of replacing aging vessels and adding the new capabilities needed to meet emerging requirements.

Two new LHD amphibious assault ships and two new LSD dock landing ships will join the amphibious force by FY 1998. Another new LHD, authorized in FY 1996, will be delivered in FY 2001. This ship will constitute the Navy's twelfth large-deck amphibious assault ship, the number required to support ARG deployments. In the interim, the USS Guam will be retained in the force into FY 1998, one year longer than previously planned, in order to satisfy forward presence requirements and support personnel operating tempo goals.

The LPD-17 amphibious transport dock ship represents the key to the recapitalization of the amphibious force. This 12-ship program will replace the capabilities provided by 27 active and reserve ships projected to reach the end of their service lives after the year 2000. LPD-17s, in combination with newer LSDs and LHDs, will constitute the core of the modernized amphibious force beyond the FYDP.

ATTACK SUBMARINES

Reflecting the overall drawdown in U.S. forces, the Navy is reducing its attack submarine (SSN) force from 80 vessels in FY 1996 to 53 by FY 2001. A force of about 45 SSNs will be maintained over the longer term. These ships perform a wide range of missions, including strike, intelligence collection and surveillance, antisubmarine and antisurface warfare, special warfare, mine warfare, and battle group support.

The SSN force is relatively modern, averaging just over 13 years in age during FY 1996-2001. The force's relative youth reflects the introduction of more than 20 Improved Los Angeles (SSN-688I)-class submarines since the late 1980s, combined with continuing retirements of older SSN-637s. Since the end of the Cold War, attack submarine construction has been dramatically curtailed, with only three units of the Seawolf (SSN-21) class authorized since FY 1989. The lead ship will be delivered in FY 1996; a second unit is scheduled for delivery in FY 1998. Congress authorized partial funding for SSN-23, the third and final submarine of this class, in FY 1996. The FY 1997 budget provides the balance of funds to complete construction of the ship.

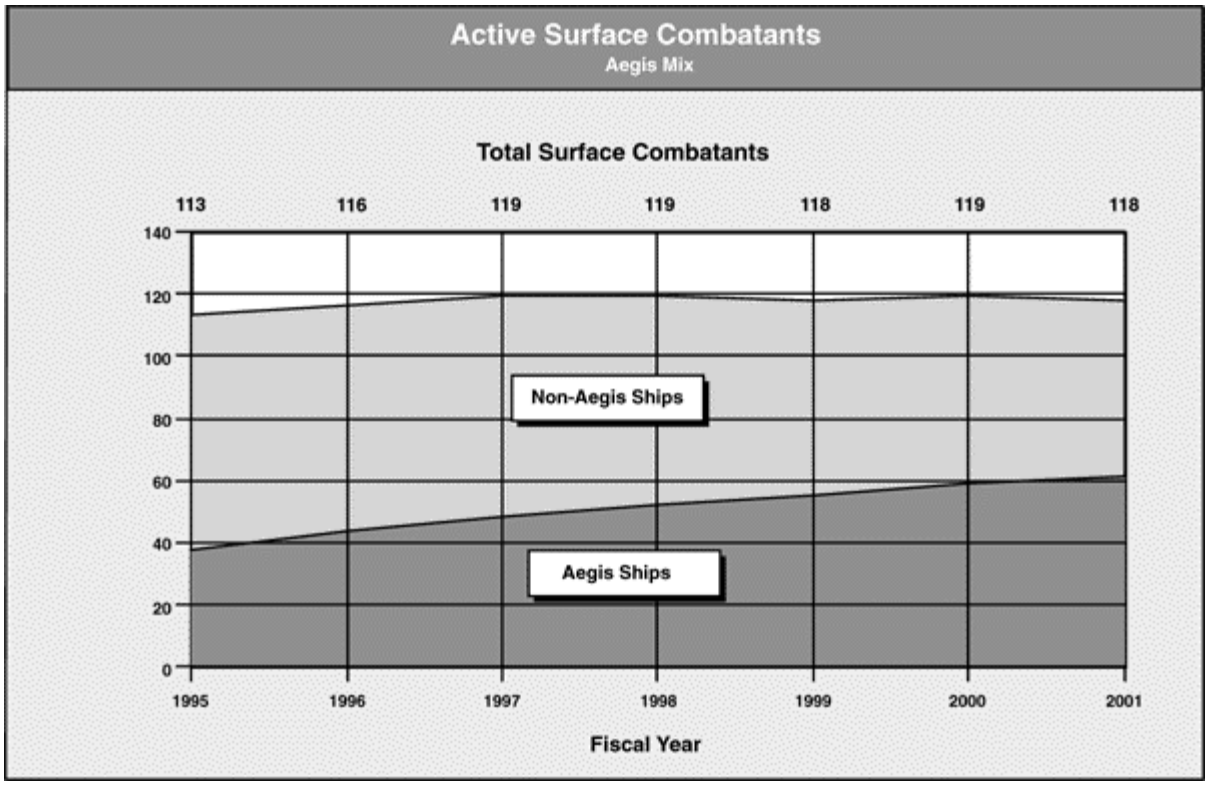
The New Attack Submarine (NSSN) program will provide a lower-cost alternative to the Seawolf with enhanced capabilities for littoral operations. The FY 1997 budget provides advance funding for the lead ship, to be procured in FY 1998. The NSSN will incorporate technology improvements from the Seawolf program, providing an affordable replacement for SSN-688s scheduled to reach the end of their 30-year service lives after the year 2002.

SURFACE COMBATANTS

In FY 1996, the surface combatant force will include 115 cruisers, destroyers, and frigates in the active fleet, plus 10 frigates in the Naval Reserve. The active fleet will average 11 years in age, increasing to 14 years by FY 2001. More than one-third of the active ships in 1996 will have the Aegis combat system with the SPY phased-array radar. That figure will rise to more than 50

percent by FY 2001, reflecting the entry of new destroyers into the fleet. Thirty-four of these vessels will be new DDG-51s. The FYDP provides funds for 14 additional DDG-51s, to be delivered after 2001.

The force goal in FY 2001 for active and reserve surface combatants could range between 126 and 138 ships, depending on future funding priorities and operational requirements. In order to meet operating tempo goals for the active force, the Navy plans to retain two FFG-7-class frigates in FY 1996 and a third in FY 1997 that were previously scheduled for early decommissioning. Decisions on retaining other FFGs now scheduled to retire beyond FY 1997 will be made on a year-by-year basis, as dictated by the tempo of operations. Naval Reserve ships are programmed to decrease from 10 frigates in FY 1997 to eight in FY 1998-2001.



The long-term surface combatant goal is currently under review. Requirements based on forward presence, historical operating tempos, and possible contingency scenarios are being examined. The Surface Combatant of the 21st Century (SC-21) program, which was approved for concept development last year, will provide replacements primarily for older DD-963s starting around the year 2010. As part of this program, the Navy is undertaking a three-year study of total combatant requirements, in which it is evaluating a wide range of concepts to meet projected needs.

COMBAT LOGISTICS FORCES

The fourth AOE-6-class fast combat support ship will be delivered in FY 1998, bringing the total inventory of AOEs to eight. These ships provide munitions, bulk petroleum, oil, lubricants, and

other provisions to battle forces at sea. The Navy will procure a fifth ship of this class early in the next century to meet longer-term requirements. The Navy also plans to procure a new class of support ships, designated ADC(X), beginning in FY 2000. These ships will replace aging ammunition and dry cargo ships. Ongoing studies are examining a wide range of concepts to meet the logistics support requirements of battle groups at sea.

MAJOR FLEET SUPPORT SHIPS

The FY 1997 budget reduces the force of tenders from 10 active ships in FY 1995 to three by FY 1999. One additional ship will be placed in reduced operating status by FY 1999. This latter ship could be activated by the Military Sealift Command (MSC) if needed in a crisis. A force of three active tenders will provide adequate repair capabilities for routine peacetime presence operations, serving as a hedge against the unavailability of overseas basing facilities. The combination of active ships and the MSC tender fully supports MRC requirements.

Weapon Systems

TOMAHAWK

Tomahawk cruise missiles, carried by submarines and surface ships, enable seaborne forces to launch attacks against surface and land targets from 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 former area were demonstrated during the September 1995 missile strikes against targets in Bosnia and Herzegovina, with Tomahawks destroying or damaging all of their intended targets with no collateral damage. The FY 1997 budget provides funds for additional improvements in Tomahawk mission planning capabilities. Programmed enhancements include the Tomahawk Afloat Planning System and the Advanced Tomahawk Weapon Control System, scheduled for introduction within the next several years. These upgrades will allow forces at sea to plan and modify land-attack missions more rapidly than is currently possible.

Longer-term upgrades to the Tomahawk missile are being pursued as part of the Tomahawk Baseline Improvement Program (TBIP). TBIP will enhance the terminal guidance, precision strike, and hard-target penetration capabilities of Tomahawk missiles. The program is currently in the engineering and manufacturing development phase, with initial testing scheduled to start later this year. The improved missiles are scheduled for production beginning in FY 1998.

STANDARD MISSILE

An upgraded version of the Standard surface-to-air missile (SM-2 Block IV) entered production in FY 1995 as part of a consolidation of production within the Standard Missile Company. Compared with earlier Standard models, SM-2 Block IV missiles provide a larger engagement envelope against advanced antiship cruise missiles. Development continues on two other versions of the Standard -- the SM-2 Block IIIB, which will enhance fleet air defenses, and the SM-2 Block IVA, which will provide an area (lower-tier) theater ballistic missile defense

capability. Details on the latter program are provided in the Ballistic Missile Defense chapter of this report.

SHIP SELF-DEFENSE SYSTEMS

To meet emerging threats, the Navy is enhancing the self-defense capabilities of its warships. Efforts in this area are being pursued under the Cooperative Engagement Capability (CEC) and Ship Self-Defense (SSD) programs.

CEC consists of hardware and software improvements designed to strengthen the air defenses of naval task groups. Ships with these upgrades will be able to pass detailed targeting information to other ships within a task force in near real time, thereby enhancing rapid response capabilities against enemy attacks. Early tests have demonstrated CEC's potential to contribute to fleet defenses. The FY 1997 budget provides funds to install CEC equipment in two Aegis cruisers, one aircraft carrier, and one large-deck amphibious ship. Funding through the remainder of the FYDP supports the modification of an additional 26 ships, including aircraft carriers, surface combatants, and amphibious vessels. The remaining ships in the program will be upgraded by 2010.

SSD comprises a set of programs designed to improve active and passive ship self-defense capabilities. Upgrades to the Close-In Weapon System (CIWS), combined with installation of the Rolling Airframe Missile (RAM) and Evolved Sea Sparrow Missile (ESSM) systems on destroyers and amphibious ships, will add depth to current air defense capabilities. Other initiatives in this area include quick-reaction combat capability enhancements, ship signature reductions, improved integration of shipboard weapons, an improved electronic warfare decoy system, and the introduction of infrared sensors. The Navy also has begun a study to investigate the difficulties inherent in operating shipboard sensors in littoral environments. Results from this study will help define future modernization programs that might be needed to enhance threat detection and ship self-defense capabilities.

The Navy also is making improvements in its ship-based torpedo defenses. The FY 1997 budget continues development of the Surface Ship Torpedo Defense (SSTD) system, which will be installed on aircraft carriers, surface combatants, and amphibious ships during routine maintenance periods.

LIGHT AIRBORNE MULTIPURPOSE SYSTEM (LAMPS)

The Light Airborne Multipurpose System (LAMPS) combines the SH-60B helicopter with computer-integrated shipboard equipment to expand the range and capabilities of surface combatants for antisurface, antisubmarine, surveillance, and targeting missions. The SH-60B will be renamed the SH-60R; it is undergoing a service life extension program as well as significant sensor and weapon upgrades to improve its ability to operate and survive in littoral environments. The LAMPS is fully integrated into the Navy's surface combatants and is being added to the Flight IIA version of the DDG-51, which began construction in FY 1994.

NAVAL SURFACE FIRE SUPPORT

Acknowledging projected shortfalls in this mission area, the Navy has programmed additional funds to strengthen its surface fire support capabilities by the end of the FYDP. Specifically, the FY 1997 budget and associated FYDP provide $216 million, an increase of $68 million over last year's plan, to design and procure an advanced 5-inch projectile. This weapon will be capable of traveling approximately 60 nautical miles and delivering a variety of munitions with accuracy. Moreover, the added funding supports tests of various surface-to-surface missile systems in the fire support role. In combination, these initiatives will deliver needed improvements to the fleet while sustaining a strong research and development program.

Surveillance and Communications

The FY 1997 budget includes funds for critical upgrades to naval C4I systems, such as the Joint Tactical Information Distribution System (Link 16), the Naval Tactical Command System Afloat, Extremely High Frequency Polar Satellite Communications, commercial satellite communications, and the Digital Wideband Transmission System. These upgrades will provide a common tactical picture for commanders, facilitate communications with forces ashore, and improve the accuracy, correlation, and fusion of tactical data. The result will be to strengthen command and control capabilities in joint operations and enhance the ability of aircraft carriers to support joint force air component commanders.

P-3C MARITIME PATROL AIRCRAFT (MPA)

The FY 1997 budget provides for an MPA force of 12 active and eight reserve squadrons. These aircraft provide multimission support for naval task groups at sea through their ability to conduct antisurface, antisubmarine, surveillance, and mining operations. With P-3C aircraft no longer in production, modernization initiatives are focusing on service life extensions and upgrades of existing aircraft. Ongoing and planned programs will extend the operational life of P-3C aircraft to about 50 years, deferring the need to fund a replacement aircraft until the year 2015. The Anti-surface Warfare Improvement Program, initiated in FY 1994, is utilizing commercial off-the-shelf technologies to improve the surveillance, combat identification, and antiship mission capabilities of the P-3C force.

Table IV-6

Selected Modernization Programs

System	Current Dollars (Millions)			
	FY 199 5Actual	**FY 1996 Actual**	**FY 1997 Budgeted**	**FY 1998 Planned**
SSN-23				
RDT&E	162.5	123.2	110.9	48.7
Procurement	--	674.5	773.1	--
New Attack Submarine (NSSN)				
RDT&E	455.6	442.4	487.6	454.7
Procurement	--	775.2	287.0	2,702.1
DDG-51 Destroyer				
RDT&E	895.0	91.9	89.3	100.5
Procurement	2,642.0	2,194.2	3,319.3	2,247.9
Tomahawk				
RDT&E	83.0	165.3	136.4	125.9
Procurement	267.8	117.3	96.3	162.3
Standard Missile				
RDT&E	14.3	22.0	1.6	1.4
Procurement	244.7	127.7	204.1	1.4231.4
Cooperative Engagement Capability				
RDT&E	153.8	257.9	165.6	151.1
Procurement	--	--	--	84.5
Evolved Sea Sparrow Missile				
RDT&E	45.3	63.5	37.5	49.3
Procurement	64.3	72.8	44.7	82.1
Rolling Airframe Missile				
RDT&E	17.9	25.2	20.0	18.0
Procurement	66.4	67.8	49.9	33.2
P-3C AIP Program				
RDT&E	--	7.9	--	--
Procurement	8.6	143.4	52.3	92.0

Mine Countermeasures

The FY 1997 budget and associated FYDP increase funding for mine countermeasure (MCM) programs by $53 million relative to last year's plan; more than two-thirds of the additional money will go toward force modernization. The added funding supports development and procurement of the Remote Minehunting System and Airborne Mine Neutralization System as well as shallow-water mine countermeasures, such as the Shallow Water Assault Breaching System. The funding addition will also enhance the readiness and sustainability of mine countermeasure forces.

The budget also provides funding for the continuous deployment of four MCM-class ships overseas -- two in Japan and two in the Persian Gulf. This initiative will provide critical mine clearance capabilities at the earliest stages of a conflict, a capability identified in recent wargames as critical to the successful prosecution of an MRC. Forward-deployed MCM ships, in conjunction with early-arriving mine countermeasure helicopters, will allow naval forces to secure the sea and clear the way for sealift ships.

FREEDOM OF NAVIGATION

Freedom of navigation for U.S. maritime forces is discussed in Appendix I.

CONCLUSION

The FY 1997 budget supports the maritime strategy and programs implemented as a result of the Bottom-Up Review. The budget continues essential modernization programs, while preserving force readiness and sustaining quality of life initiatives. Taken as a whole, these programs will enable maritime forces to successfully execute their missions, while protecting and advancing the interests of the United States.

Chapter 20

AVIATION FORCES

INTRODUCTION

Aviation forces are composed of fighter, bomber, and attack aircraft, as well as specialized aircraft. The specialized aircraft perform a wide variety of functions, such as aerial refueling, airborne warning and control, electronic warfare and air defense suppression, and reconnaissance and surveillance. Helicopters and airlift aircraft also are part of the aviation force structure; these systems are addressed in the chapters 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 rapid deployability and global reach of these forces make them particularly important in the post-Cold War era. The utility of aviation forces was demonstrated again last fall in the operations that helped stabilize the military situation on the ground in Bosnia and Herzegovina. Aviation forces continue to play a key role in peacetime presence missions.

Reflecting these complementary capabilities, the following broad goals 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).
- Up to 181 long-range Air Force bombers (10 active squadrons, three reserve).
- Eleven naval carrier air wings (10 active and one reserve) operating on eleven active carriers plus a reserve/training carrier available for deployment.
- Four Marine air wings (three active and one reserve).

Acquisition programs supporting these objectives include fielding, by FY 2000, 20 B-2 bombers with conventional attack capabilities, while continuing development of the F-22 fighter and F/A-18 E/F fighter/ attack aircraft. Over the past year, significant progress has been made in defining

the future Joint Strike Fighter (JSF), which will be a product of the Joint Advanced Strike Technology (JAST) program initiated in 1993

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.
- Strike Warfare -- conduct air attacks against critical enemy ground targets; interdict or destroy enemy surface forces and their vital functions; provide close air support.
- 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 air, land, and maritime forces; provide damage assessment.
- Deterrence -- prevent aggression against the United States and its allies by providing a ready and flexible means of responding to threats against vital interests.
- Military Operations Other than War -- support counterdrug, insurgence and counterinsurgence, counterterrorism, peacekeeping and peace enforcement, humanitarian assistance, and disaster relief operations.

To carry out these missions, 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 for an operation and their integration into a joint force capable of accomplishing the missions the JFC requires.

Aviation forces conducted a variety of combat and noncombat operations during 1995. These included enforcement of the no-fly zones in Iraq and Bosnia and Herzegovina, strikes conducted during NATO Operation Deliberate Force on Serb forces violating the UN accords in Bosnia and Herzegovina, and interceptions of aircraft suspected of making illegal drug deliveries to the United States.

THREATS

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 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 are being widely marketed. New radar, electronic countermeasures, weapons, and other equipment can be fitted on existing aircraft at a much lower cost than buying new aircraft. Highly capable weapons, such as the Russian-made AA-11 or Israeli-made Python 4 short-range missile and the

French-made Mica medium-range missile, could significantly increase the ability of foreign air forces to challenge U.S. air operations.

- Advanced 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 missiles, radars, and command, control, and communications (C3) equipment. These systems have advanced electronic features that are difficult to counter and could pose a serious challenge to the quick and successful prosecution of an air campaign.

Over the last year, trends in the projected capabilities of potential adversaries were reassessed. Given the difficulty, cost, and time entailed in developing and maintaining fighter forces, it was judged that adversary nations might choose to emphasize acquisition of ground-based air defenses as the highest-leverage method of countering U.S. air power. Accordingly, strengthening U.S. capabilities for locating and destroying mobile, ground-based air defense systems has been deemed a high priority.

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 smaller, more flexible forces capable of countering emerging threats and sustaining a credible forward presence.

The Air Force is programmed to have a total of 20 fighter wing equivalents (FWEs) at the end of FY 1996. The term fighter wing denotes an organizational unit comprising 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 one wing equivalent to reach the goal of 20 FWEs by the end of 1996. The resulting force will include the mix of aircraft shown in Table IV-7.

This structure emphasizes air-to-ground missions because regional contingencies are expected to present a less challenging 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-15s and F-16s) will maintain a good air-to-air capability, however, permitting forces to be allocated as needed.

The Air Force is retiring both its F-4G and F-111 fleets in 1996, reflecting the high cost of maintaining the small remaining inventories of these older aircraft. With the F-111's retirement, the longest-range fighter/ attack missions will be performed by F-15Es. B-1, B-2, and B-52 bombers will complement the F-15E in this role as they receive munition upgrades and additional spares for sustained conventional operations. (Upgrade programs for the bomber force

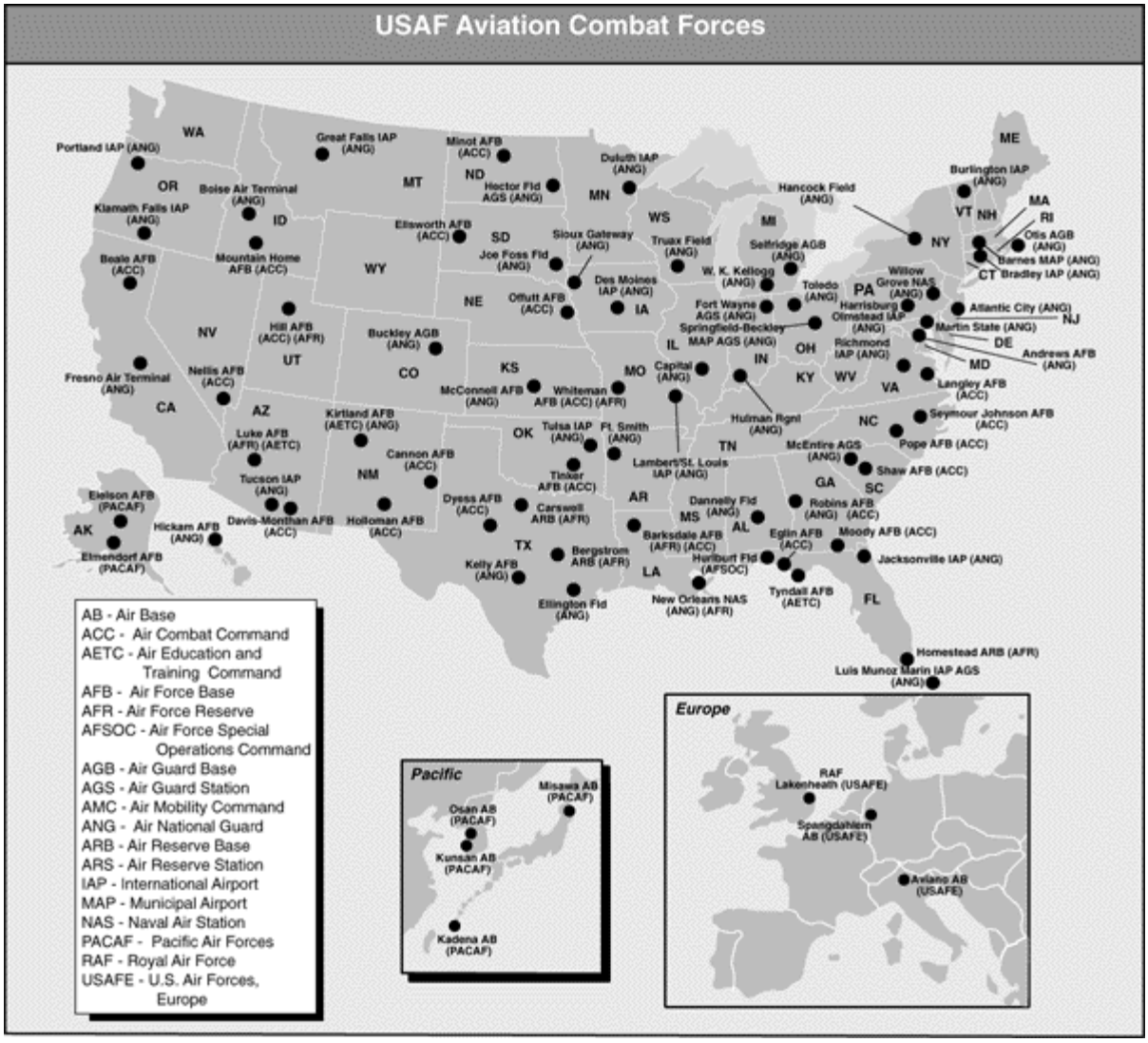
are described later in this chapter.) Some F-16C/Ds have been modified to provide some of the capability of F-4Gs for locating and suppressing enemy air defense missile sites. Most F-16A/B models will be retired, including those operated by air defense squadrons in the continental United States. These aircraft are no longer needed in the operational force, given that adequate numbers of newer F-16C/Ds will be available during the next 10 years. Beginning by FY 2010, the Joint Strike Fighter, derived from the ongoing JAST program, will replace all remaining Air Force F-16s. Between FY 2005 and FY 2010, the Air Force structure is projected to be short the equivalent of about one wing of fighter aircraft, reflecting the higher anticipated rate of peacetime attrition relative to new aircraft deliveries over these years. Possible hedges to fill that gap are discussed in the Modernization section of this chapter.

Table IV-7

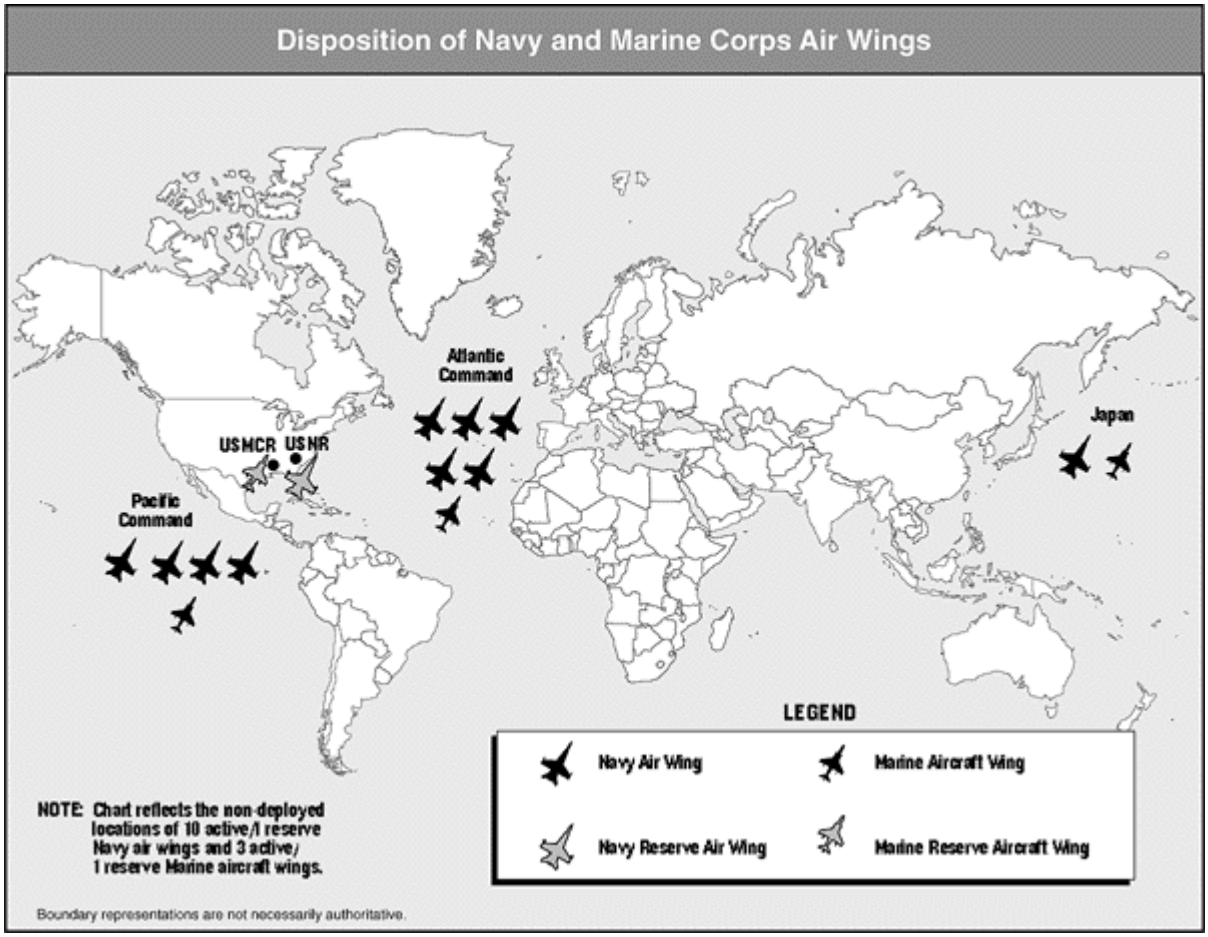
(Fighter Wing Equivalents -- FWEs)

Aircraft Type	Mission	Total FWEs	Active FWEs	Reserve/Guard FWEs
F-15A/B/C/D	Air superiority	4.1	3.5	0.6
F-15E	Long-range attack	1.8	1.8	0
F-16C/D	Multirole [a]	11.4	6.2	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.



Naval aviation also is being restructured consistent with the force goals developed during the Bottom-Up Review. The Navy has retired two active and one reserve carrier air wing (CVW), leaving 10 active wings and one reserve wing. A-6 attack aircraft continue to be 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. An air-to-ground upgrade is being provided for most F-14s to give them the capability to employ laser-guided bombs (LGBs) from medium to high altitudes; this modification entails equipping the aircraft with LANTIRN forward-looking infrared pods. F-14s incorporating this feature will be available beginning in 1996.



MARINE CORPS AIR WINGS

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-18 C/Ds and modified versions of F-14 fighters (see Table IV-8). The number of fighter/attack aircraft in each wing will decline to 50 from the current level of about 56. The smaller wings will be more flexible because they will operate a greater percentage of multirole aircraft, thus increasing the average number of precision strike-capable aircraft from 36 to about 50. The multirole Joint Strike Fighter is projected to enter the force beginning around 2010, replacing the F-14 in the Navy and both the AV-8B and F/A-18 in the Marine Corps.

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 IV-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, forward air control, 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 IV-8

Composition of Carrier Air Wings

Air Wing Type	Aircraft Type (PMAI per CVW)	Number of Air Wings				
		FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Transitional	F-14 (20), F/A-18 (20), A-6 (16)	--	--	--	--	--
Power Projection	F-14 (20), F/A-18 (24), A-6 (16)	6	3	--	--	--
Littoral	F-14 (14), F/A-18 (36)	4	7	10	10	10
Reserve	F-14 (14), F/A-18 (36)	1 [a]	1	1	1	1
Total Navy Combat Aircraft (PMAI) [b]		574	544	478	478	478

NOTE: PMAI = primary mission 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] From 1995 on, the reserve air wing will include 36 PMAI F/A-18s, operated by two Navy Reserve squadrons (24 PMAI) and one Marine Reserve squadron (12 PMAI).
[b] Total PMAI 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 PMAI 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).

Table IV-9

Composition of Marine Air Wings --End FY 1998 (Fixed-Wing Combat Aircraft -- PMAI and Squadrons)

Aircraft Type	Mission	Active PMAI (Squadrons)	Reserve PMAI (Squadrons)	Total PMAI (Squadrons)
F/A-18 A/C	Multirole	96 (8)	48 (4)	144 (12)
F/A-18D	Multirole	72 (6)	0	72 (6)
AV-8B	Close air support	140 (7)	0	140 (7)
Total				356 (25)

Emerging needs and efficiency considerations have led to a new approach to managing Navy and Marine Corps F/A-18, F-14, AV-8B, and EA-6B peacetime 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 will help ensure that neither Service experiences excessive personnel deployments. Even though the pool of available Marine aircraft will decrease with the planned retirement of two F/A-18

squadrons by the end of FY 1997, up to four Marine F/A-18 squadrons (and possibly one EA-6B squadron) will be scheduled to deploy aboard aircraft carriers over the next three years to support Navy operations. Navy F/A-18 or F-14 squadrons will also deploy as necessary to support Marine operations.

Capabilities

The speed with which aviation forces can deploy worldwide underscores their importance in the post-Cold War era. Aviation forces would be heavily involved in all phases of an MRC, with their employment adapted to meet changing needs as the conflict unfolded:

- Phase I -- Halting the Invasion. Aviation forces play a crucial role in the United States' initial response to distant contingencies. In particular, the use of both land- and carrier-based strike aircraft to interdict enemy armor formations in the opening days of a conflict is key to delaying an enemy's advance until reinforcements arrive in the theater. Heavy bombers are expected to contribute increasingly to this early antiarmor role by the end of the decade as advanced conventional weapons and logistics support for sustained operations become more commonly available to them. Elimination of enemy weapons of mass destruction would also be an early priority for aviation forces, as would establishment of air superiority. Gaining control of the skies is critical to the effective conduct of air-to-ground operations as well as to the protection of U.S. and coalition forces, particularly at debarkation points.
- Phase II -- Force Buildup. The buildup of aviation forces in the theater would enable air superiority to be sustained, while adding the capability to perform a variety of surveillance and ground attack operations. In the Gulf War, for example, aviation forces played a vitally important role during the buildup phase in reducing Iraqi ground combat strength through the direct bombardment of maneuver units. Aviation forces also could be used during the force buildup to attack targets deeper in enemy-held territory, such as logistics and command elements.
- Phase III -- Counteroffensive. Once sufficient combat strength was available in the theater, U.S. and coalition forces would launch a counterattack. Aviation forces would focus more of their effort during this phase on direct support of friendly land forces maneuvering against enemy ground formations.
- Phase IV -- Ensuring Postwar Stability. Once the enemy had been defeated, some aviation forces would remain in the theater to enforce the peace. Their tasks would include maintaining air superiority, performing surveillance of the region, and carrying out additional ground attacks, if required.

Overall aviation force structure goals, derived in the Bottom-Up Review three years ago, are as follows:

- About 10 Air Force FWEs, augmented by 100 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. Carrier air wing warfighting contributions and deployments associated with peacetime presence requirements generate a need for 10 Navy active carrier air wings and one composite Navy/Marine Corps reserve air wing. The ability of expeditionary forces to redeploy quickly over large distances has led to the determination that three MEFs (seven brigade-equivalents) are sufficient for two nearly simultaneous MRCs.

- 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 effectiveness of existing munitions at night and in adverse weather, while minimizing aircraft attrition. To improve force effectiveness and reduce aircraft attrition, the Department plans to acquire a wide range of advanced munitions. These weapons will be completing their development programs over the next several years. The specific pace and scope of weapons acquisition programs will depend in part on broader questions about wartime need and the number and type of delivery systems involved.

The difficult question of the most appropriate mix of weapons and delivery systems is being considered in an ongoing DoD analysis, the Deep Attack/Weapons Mix Study (DAWMS). DAWMS was expanded by Presidential direction earlier this year, following a National Security Council assessment of additional B-2 bomber procurement. The study is evaluating aggregate requirements for air-to-ground weapons and their delivery systems for two nearly simultaneous MRCs, plus possible demands from lesser contingencies. It also is reviewing command, control, communications, computer, and intelligence (C4I) architectures and related systems that support the planning and execution of deep attack missions. The study, with expanded treatment of force structure considerations, is planned for completion by the end of 1996. Emerging results will be used in establishing procurement priorities and inventory goals for the Department's FY 1998 budget request and the FY 1998-2003 Future Years Defense Plan.

The Deep Attack/Weapons Mix Study will draw on a variety of other studies, including work accomplished last year in the Heavy Bomber Force Study carried out for the Department by the Institute for Defense Analyses. The new study also will benefit from the ongoing implementation of the Capabilities-Based Munitions Requirements Process, which was established several years ago by the Joint Staff to improve the integration of joint force needs and capabilities. Moreover, the study responds directly to the recommendation of the Commission on Roles and Missions of the Armed Forces that the Department conduct an assessment of all U.S. deep attack systems to determine the appropriate force size and mix. Finally, the study fulfills last year's request by Congress that the Department provide a report justifying future planned development and production of precision guided munitions.

AIR FORCE FIGHTER/BOMBER FORCES

The Air Force provides versatile and responsive striking power for employment worldwide on short notice. 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 MRC response, flying directly from the continental United States if need be. 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 Air Force maintains a significant overseas presence in peacetime, enhancing both deterrence and crisis-response capability. Those forces permanently stationed overseas 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 that objective by approximately two FWEs, representing deployments in Southwest Asia and the Adriatic region that are not part of the permanent overseas basing plan.

To help ease the burden of unanticipated contingencies, Air Force Reserve and Air National Guard squadrons were deployed routinely during the past year in support of operations over Iraq and Bosnia and Herzegovina. Reserve component forces are playing an expanded role in operations such as these, thus reducing pressures on the active force.

BOMBER MODERNIZATION

The bomber force is composed of B-2, B-1, and B-52 aircraft. Table IV-10 shows the current and projected inventories of these aircraft. The force counts reflected in the table represent the primary mission aircraft inventory (PMAI) and therefore exclude training aircraft (typically 12 B-1s and 12 B-52s). The training aircraft do not have the weapons loading crews and readiness spares kits generally required for forward deployments. At present, the total inventory of 94 B-52Hs and 95 B-1Bs exceeds the number of PMAI aircraft that are fully funded in terms of operations and maintenance, load crews, and spare parts in FY 1996-1999. All of the B-52s and B-1s in the inventory, including those in attrition reserve, will be kept in flyable condition and will receive planned modifications in a timely manner. The Department plans to increase the B-1B PMAI to 82 by 2001, when modern weapons are available to enhance the bombers' effectiveness in conventional operations.

Table IV-10

Air Force Long-Range Bomber Inventory (PMAI/TAI)

Aircraft Type	FY 1995	FY 1997	FY 1999	FY 2001
B-52	62/94	44/66	44/66	44/66
B-1	48/95	48/95	48/95	70/95
B-2	6/7	10/13	13/17	16/20

NOTES: PMAI = primary mission aircraft inventory; TAI = total aircraft inventory. The force structures shown are for the ends of the fiscal years.

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. The B-2's ability to penetrate heavy defenses is further enhanced through its employment with air-superiority aircraft and electronic warfare aircraft that conduct standoff jamming. B-2 bombers will be able to carry general-

purpose bombs, as well as cluster munitions and the Joint Direct Attack Munition (JDAM). Current plans call for the procurement of 20 operational B-2s (16 PMAI). To date, nine B-2s have been delivered to Air Combat Command.

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 Block 30 versions. In 1996, Block 20 aircraft will have the Navstar Global Positioning System (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 Department is studying the cost-effectiveness of potential B-2 upgrades beyond the Block 30 configuration.

The B-1, 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-1 an advanced navigation system integrated with the Navstar GPS, and an improved communications system. Enhancements to the aircraft's computers and electronic countermeasures system are slated to follow around FY 2002. Other programmed upgrades will give the B-1 the ability to carry several types of advanced weapons. By June 1996, the B-1 will be able to deliver the entire family of advanced cluster munitions (CBU-87, CBU-89, CBU-97). This 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 FY 2000, followed by the Wind-Corrected Munitions Dispenser (WCMD) in FY 2002 and the Joint Standoff Weapon (JSOW) in FY 2003.

The B-52 can be used in either the nuclear or conventional role. The B-52's nuclear capabilities are described in the chapter on Strategic Nuclear Forces. For conventional missions, the B-52 carries a full complement of unguided weapons. In addition, it is the only launch platform for the Conventional Air-Launched Cruise Missile (CALCM). Some B-52s have been modified to carry Have Nap standoff precision weapons and Harpoon antiship missiles. Future modifications will enable the entire B-52 force to carry JDAM, JSOW, and WCMD, as well as CALCM, Have Nap, and Harpoon.

The FY 1995 Heavy Bomber Force Study concluded that the currently planned bomber force, acting in conjunction with other U.S. forces, is adequate to meet the expected demands of a two-MRC scenario. Moreover, the study concluded that buying additional Block 30 B-2s would be less cost-effective than upgrading the more numerous B-1 force, upgrading the 20 planned B-2s beyond the Block 30 configuration, or expanding the planned arsenal of advanced conventional munitions.

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 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 the bombers' 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. Rotationally forward-deployed, carrier battle groups and amphibious ready groups provide a prompt means of responding to crises. The planned Navy/Marine Corps force structure will sustain continuous overseas deployments of about three carrier air wings afloat and five Marine fighter/attack squadrons ashore. Employed in conjunction with ground and Air Force units, these forces enable the United States both to respond initially to crises and to conduct 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 to meet emerging demands as the operation unfolds.

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, aircraft based on carriers and embarked on amphibious ships would provide the air support initially required by a MAGTF. Once a foothold had been established in a region, these aircraft 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 be redeployed to other locations if circumstances warrant. Under a new initiative funded in the FY 1997 budget, one of three Marine Corps F/A-18 squadrons now operating from Iwakuni, Japan, on a rotational basis will be permanently stationed at that location. Forward basing one unit will free two other squadrons from the rotational cycle, easing operational tempos.

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 warfare 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 greatly increase the efficiency of

air operations. Aerial 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 chapter on Mobility Forces), 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 aerial refueling, while the Marine Corps will use KC-130s. In addition, a portion of the Air Force KC-135 fleet is being given multipoint probe/drogue refueling capability, which will increase the Air Force's ability to refuel Navy and Marine Corps aircraft in flight. Existing Air Force KC-10s also have probe/drogue refueling capability, but these dual-purpose aircraft may have higher-priority airlift tasks early in a contingency.

Electronic warfare and air defense suppression forces locate and neutralize enemy air defenses. The Air Force, Navy, and Marine Corps all operate aircraft for these purposes, as shown in Table IV-11.

Table IV-11

Airborne Electronic Warfare Aircraft (PMAI as of FY 1995)

Surveillance/Electronic Intelligence	Support Jammers (Standoff and Escort)	Lethal Suppression
Rivet Joint / RC-135 (10 A/C -- Air Force)	EF-111 (24 A/C -- Air Force)	F-4G Wild Weasel [a] (24 A/C -- Air Force)
EP-3 (12 A/C -- Navy)	EC-130 Compass Call (10 A/C -- Air Force)	F-16 HTS [b] (72 A/C -- Air Force)
ES-3 (16 A/C -- Navy)	EA-6B (60 A/C -- Navy/Marine Corps)	F/A-18 HARM [b],[c] (456 A/C -- Navy/Marine Corps)
EA-6B (60 A/C -- Navy/Marine Corps)		EA-6B [b],[c] (60 A/C -- Navy/Marine Corps)

[a] Retirement of all F-4Gs will be complete by the end of FY 1996.
[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. [c] Some aircraft have overlapping capability; the missions noted are secondary.

To ease the transition to the new Joint Force concept, the retirement date for the EF-111 force has been slipped one year, to FY 1998. Once EF-111s leave the inventory, the mission of tactical support jamming for the Air Force will be assumed by Navy/Marine Corps EA-6Bs. The Navy will upgrade a total of 120 EA-6Bs (104 PAI) for this purpose, extending the aircraft's service life and updating their mission avionics system. The latter enhancement will include the provision of a new receiver system utilizing lightweight, off-the-shelf products. The upgraded EA-6Bs will provide critical support for joint force operations. The Air Force will supply a number of electronic warfare-trained aircrews to selected Navy squadrons to facilitate such operations.

Under a comprehensive series of studies begun in FY 1994, the Department is assessing the future adequacy of U.S. electronic warfare capabilities. The studies are examining 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. The first phase of the assessment resulted in the plan to retire EF-111s and replace them with EA-6Bs. Further results of the analyses, expected later this year, will be used to identify capabilities that electronic warfare 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 IV-12).

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 of the inventory. By the turn of the century, the penetrator force will consist mostly of unmanned aerial vehicles (UAVs), such as the Predator employed over the former Republic of Yugoslavia. 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.

Table IV-12

Airborne Surveillance and Reconnaissance Forces (Total Active Inventory) [a]

Standoff	FY 1996	Planned FY 2001	Penetrators	FY 1996	Planned FY 2001
E-2C Hawkeye	89	79	RF-4C	18	0
E-3B/C AWACS	33	33	F-14 TARPS (Pods)	49	49
E-8C JSTARS	3	20	F/A-18D (RC)	0	31
U-2R/S	32	32	Pioneer	43	20
RC-135V/W Rivet Joint	14	14	Tactical UAV	0	64
EP-3E	12	12	MAE UAV	10	40
ES-3A BGPHES	16	16	HAE UAV	3	14
OV-1D Mohawk	22	0			
RC-12 Guardrail	30	36			
RC-7B	5	6			

NOTE: The force structures shown are for the end of the fiscal years.
[a] Reflects PMAI as well as backup and attrition aircraft and reconstitution reserves.

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. The OV-1D fleet will be phased out entirely in the mid-1990s.

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:

- About three Red Flag/Green Flag exercises annually at Nellis Air Force Base, Nevada. These exercises provide composite force package training for Air Force squadrons on about an 18-month rotational basis, in addition to training for Navy/ Marine Corps and coalition forces. Air Force units conduct similar training in an annual Maple Flag combined forces exercise held in Canada.
- Four to five carrier air wing exercises per year at Fallon, Nevada. This program provides predeployment integrated strike training for carrier air wings.
- Ten to twelve combined-arms exercises at 29 Palms, California. These drills provide combined-arms training and combat-readiness evaluations for Marine strike squadrons operating in support of ground forces.

More than 200 joint exercises are planned for FY 1996. 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 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.

F404 engine availability for the F/A-18 has been a key readiness concern, since the F/A-18 accounts for more than 50 percent of the Department of the Navy's tactical aviation assets. Introduction of redesigned components, coupled with funding increases, is expected to bring to an acceptable level the number of aircraft in need of replacement engines. Unexpected failures in critical components could have programmatic impacts, however. Initiatives to modify acquisition regulations on competition could lessen impacts on F404 readiness.

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.

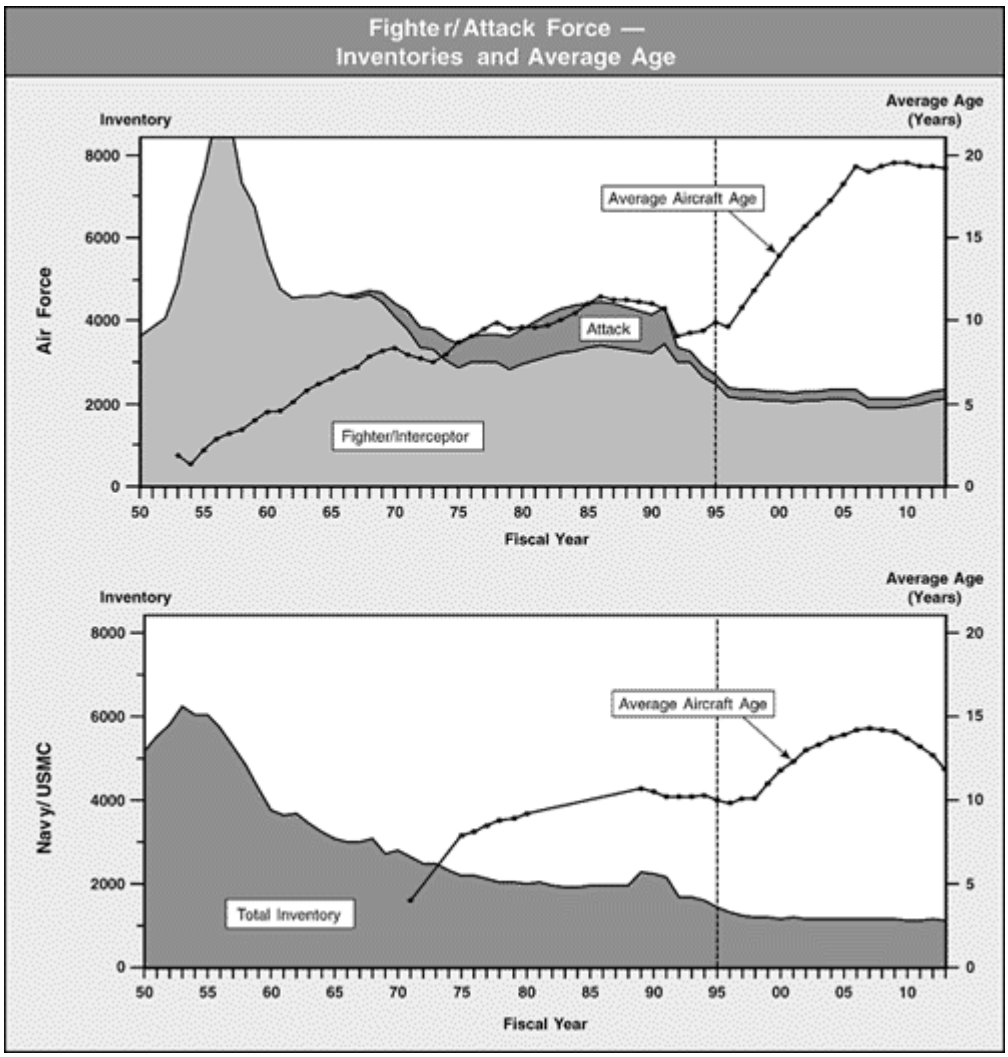
Unplanned deployments during 1995 led to reductions in the flying hours of some aircraft, with adverse readiness consequences. Surge operations undertaken on short notice, as was the case in the Adriatic, inevitably forced compensating drawdowns elsewhere. Contingency operations also displaced some regular training by forces participating in those operations. These problems need to be managed better, and the Department is continuing to work with Congress to preserve management and funding flexibility for contingency operations. These issues are discussed in greater detail in the Readiness chapter of this report.

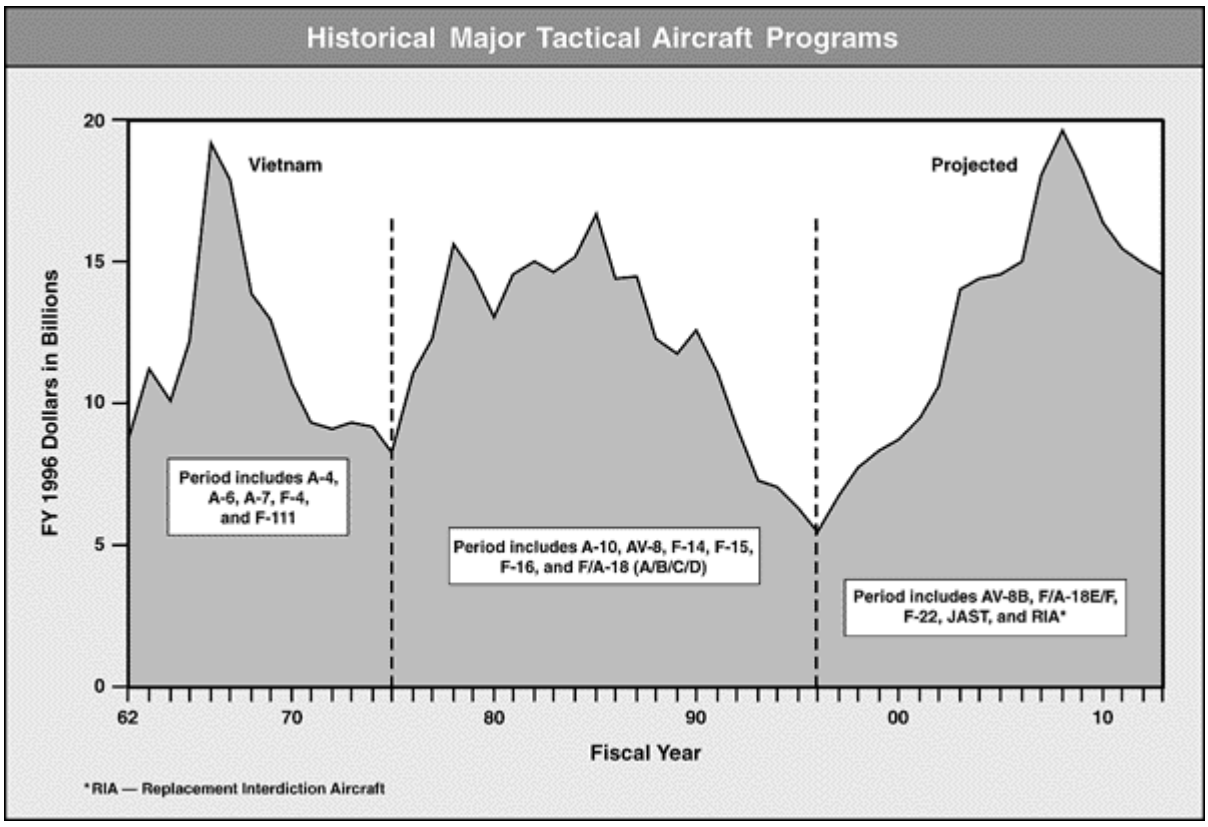
MODERNIZATION

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 U.S. qualitative advantages.
- Improve aviation force weapons. 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 warfare systems will keep aviation 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.

Over the next decade, funding for tactical aviation modernization must increase significantly if the planned force structure is to be maintained and replenished with new aircraft as necessary. Despite anticipated funding increases, the average age of the fighter force will grow dramatically until around FY 2005. These trends are illustrated in the following charts.


Fighter/Attack Force —
Inventories and Average Age
Inventory
Average Age (Years)
Air Force
Average Aircraft Age
Attack
Fighter/Interceptor
Fiscal Year
Navy/USMC
Total Inventory



Highlights of modernization programs for U.S. aviation forces are presented below. As this report went to press, funding needed to support the Department's recapitalization initiatives was under review. Annual production rates and funding objectives for some programs addressed in this chapter could change as a result of that assessment. Moreover, other changes could be made as a result of subsequent reprogramming requests. The figures given here reflect the status of programs at the time of the report's publication; adjusted figures, where applicable, will be included in the President's budget submission to Congress.

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-15C, will ensure the continued superiority of U.S. forces against long-term advances in the air-to-air and surface-to-air missile capability of potential adversaries. The F-22's low-observable characteristics, supersonic cruise speed, maneuverability, and advanced avionics will enhance its effectiveness in the air-superiority role. The F-22 also will be capable of conducting air-to-ground operations, carrying two JDAMs internally or -- with a greater chance of detection -- a larger external load. The F-22 program has been rephased. The first engineering and manufacturing development (EMD) aircraft is scheduled to fly about May 1997; long-lead funding for four preproduction aircraft will be released in 1997. Tests of a full-scale model are being conducted to confirm the aircraft's low-observable signature qualities; software development and integration are continuing as well. Plans call for production deliveries to begin in FY 2000, with initial operational capability slated for FY 2005.

The F/A-18 E/F, being developed by the Department of the Navy, 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 made its initial flight in November 1995. The $4.8 billion F/A-18 E/F EMD effort will end in FY 2001, and procurement of the first 12 of a planned inventory of 1,000 operational aircraft will begin in FY 1997. Initial operational capability is planned for FY 2001. Recent modernization decisions will allow F/A-18 E/F production to reach the planned maximum rate one year earlier than previously anticipated.

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. In addition to the radar upgrade, these aircraft are receiving more powerful engines. The AV-8B remanufacturing program was begun in March 1994, and the first flight of a remanufactured AV-8B took place in December 1995. Plans call for a total of 76 aircraft to be remanufactured, with a maximum production rate of 16 aircraft per year achieved beginning in FY 1999.

The remainder of the fighter/attack force -- F-14s, F-15s, F-16s, A-10s, and F/A-18 C/Ds -- will receive capability upgrades of a more modest nature, such as provisions to carry new munitions and tactical data processing enhancements. For the longer term, replacements may be needed for the Air Force's deep-interdiction fighter aircraft, the F-15E and F-117. The successor system, known as the Replacement Interdiction Aircraft, would be fielded sometime after FY 2010.

Neither the F-22 nor the F/A-18 E/F is sufficient to meet the full range of fighter modernization needs. The F-22, while very capable, never has been intended to fill the full 20-wing Air Force structure because of its high cost relative to other aircraft. The F/A-18 E/F also cannot meet all future Navy and Marine Corps needs, being neither sufficiently survivable for the highest-risk operations nor capable of short-takeoff and vertical-landing (STOVL) operations. Accordingly, an innovative joint service approach is being taken, merging these diverse needs into a family of common aircraft to avoid the prohibitively high cost of conducting three separate but parallel development programs. The resulting Joint Advanced Strike Technology program, initiated by the Department in late 1993, is now entering a concept demonstration phase intended to reduce risk prior to commencement of the subsequent EMD phase.

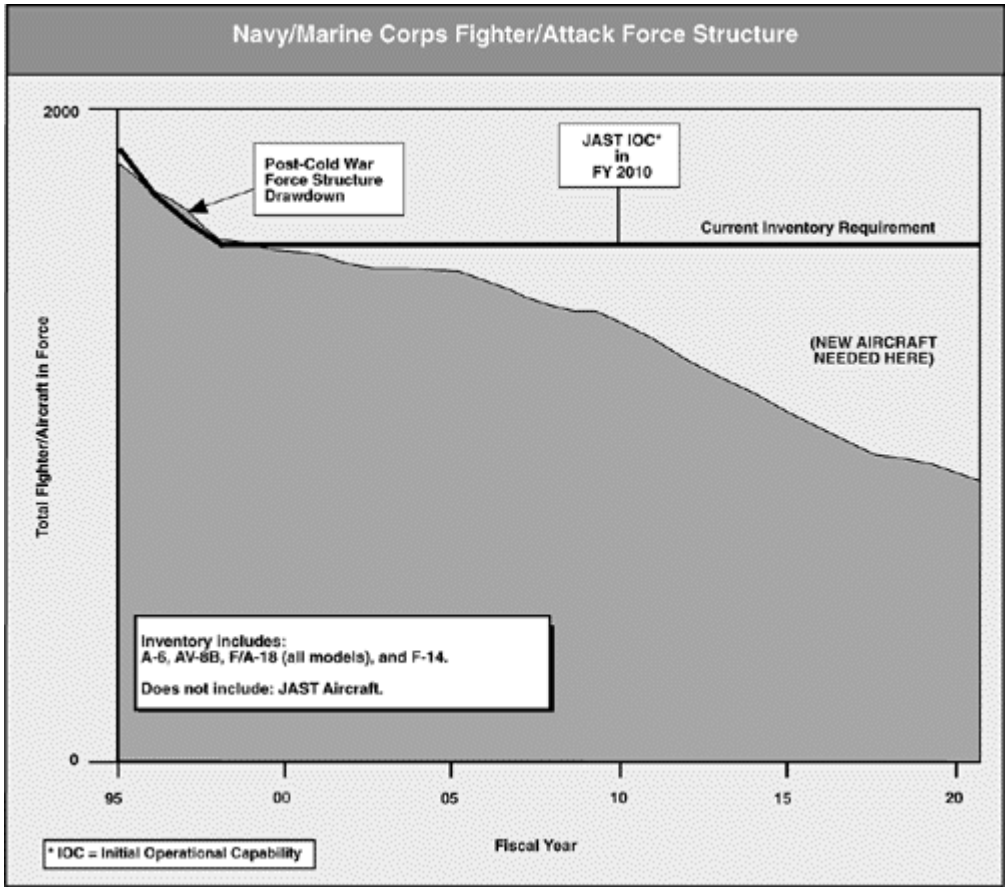
The Department conducted a thorough review of the JAST program over the last year. That assessment endorsed the overall JAST concept and achieved agreement among participating Services on desired aircraft characteristics. The development funds originally earmarked for this program, before program content was well-defined, have proven insufficient for the current plan. Funding for the program's development phase (FY 1997-2001) has been increased, and a study of appropriate tasks and funding for the later EMD phase has been initiated. Commencement of EMD is now planned for FY 2001, in contrast to last year's projection of FY 2000. Initial production of the new Joint Strike Fighter (JSF) aircraft derived from this program is anticipated in about FY 2005, with first deliveries to operational units in FY 2008 and initial operational capability slated for approximately 2010.

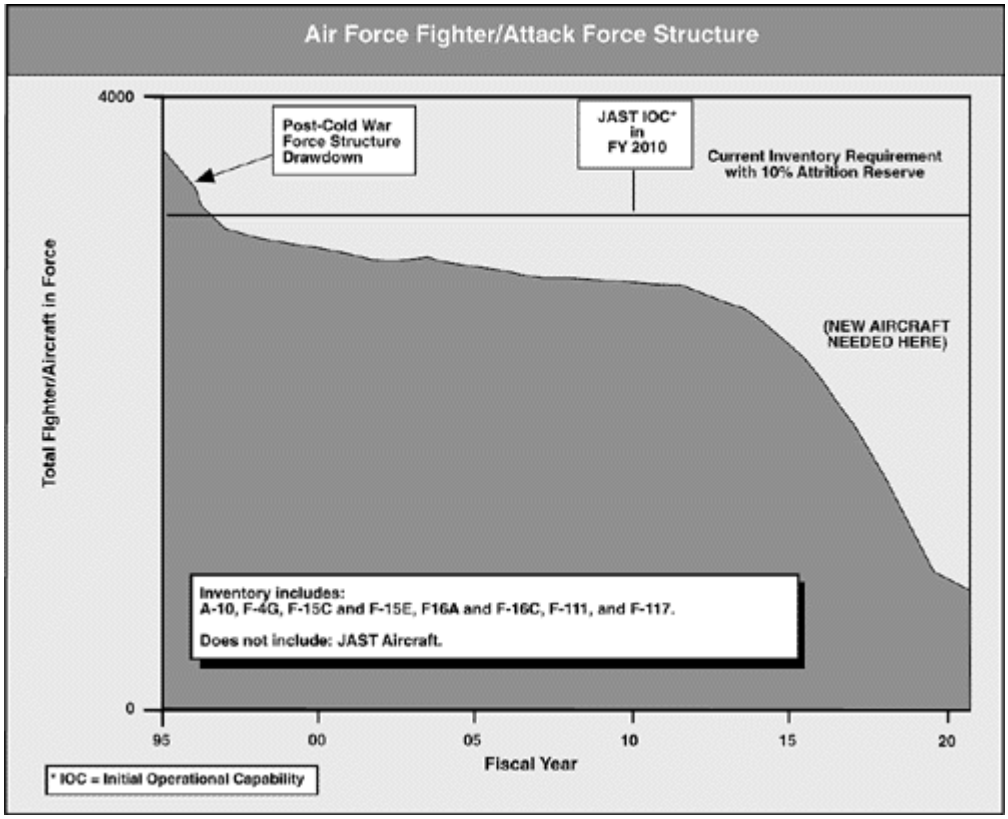
The JSF, as now envisioned, will share an airframe substantially common among all users. Its powerplant will be a single, higher-thrust derivative of an engine of the size developed for the F-

22. The Marine Corps version will be capable of STOVL operations. The plane will be designed to carry two guided bombs and two medium-range air-to-air missiles internally (plus other weapons on wing-mounted stations when appropriate). Although expected to be primarily a single-seat aircraft, some two-seat variants may be developed. The adoption of internal carriage for some weapons will enhance the aircraft's survivability. The decision to provide for internal carriage of weapons was based on analyses of projected threats and the belief that substantial signature reduction will be necessary, at least for aircraft employed early in a conflict. Avionics are being defined now, and are expected to draw from work done for the F-22, F/A-18 E/F, and other programs. The JSF is expected to be considerably more capable than the Air Force F-16 and Marine Corps AV-8B, although it will be larger and more expensive than those aircraft. On the other hand, the JSF will be capable of meeting the Navy's needs at a much more affordable cost than previously planned successor systems, such as the now-cancelled A-12 and A/F-X programs.

Plans call for the award of JAST demonstration phase contracts in October 1996 to two competing contractor teams. The teams selected would each design, develop, and fly concept demonstration aircraft as part of the preparation for the EMD phase. These aircraft will be used to evaluate handling qualities during carrier landing approaches; flight control systems; powerplant integration; and for one variant of each competitor, STOVL characteristics. Construction of the demonstrator aircraft will also help to refine manufacturing approaches that would produce the highest degree of commonality among variants.

Present plans call for the JSF to replace the F-16 in the Air Force, the F-14 in the Navy, and the AV-8B and F/A-18 A/C/D in the Marine Corps. Because these earlier aircraft were built at comparatively high annual rates during the 1980s (up to 180 F-16s and 84 F/A-18s yearly, for example), JSF production levels of well over 100 aircraft per year will be needed in spite of the significant reductions that have been made in the aviation force structure in recent years. Further, the JSF will not become available soon enough to avoid some modest force structure shortfalls during the first decade of the next century. Without a major new acquisition effort, however, there will be a precipitous decline in the fighter forces of all the Services around FY 2005, as shown in the following charts.


Navy/Marine Corps Fighter/Attack Force Structure
2000
Post-Cold War Force Structure Drawdown
JAST IOC* in FY 2010
Current Inventory Requirement
(NEW AIRCRAFT NEEDED HERE)
Total Fighter/Aircraft in Force
Inventory includes:
A-6, AV-8B, F/A-18 (all models), and F-14.
Does not include: JAST Aircraft.
0
95
00
05
10
15
20
Fiscal Year
* IOC = Initial Operational Capability



Because of the demand for large numbers of aircraft, the risk of JAST development delays, and the possibility that existing fighters could wear out sooner than expected, the Department believes there is merit in providing some mid-term hedges against force structure declines. There is a risk, for example, that a significant number of the Air Force's older F-16s will have to be refurbished substantially if they are to attain an 8,000-flying hour lifetime. There is no precedent for operating high-performance fighter aircraft over such a long life, twice that achieved thus far in operational F-16s. Alternatives available to the Department in the future to fill major force structure shortfalls range from reactivating and updating older aircraft that have been placed in secure storage (including about 400 F-16A/Bs and 150 A-10s by the late 1990s) to, at a higher cost, procuring additional new aircraft of existing types. Accordingly, $760 million has been programmed during FY 1999-2001 for modernization and upgrades of Air Force tactical aircraft. Depending on the circumstances, these funds could be applied to JAST, to upgrades of existing aircraft or further production of existing designs, or to modernization of tactical aircraft weapons and reconnaissance, surveillance, and communications systems.

As a result of congressional action, six additional F-15E and six F-16C/D fighters were authorized in FY 1996 for the Air Force. After reviewing these programs, the Department decided to add four more F-15Es and four more F-16C/Ds in FY 1997. The scheduling and pricing of this procurement are being assessed; for the F-16, it is complicated by a lack of the prior-year funding for long-lead items normally needed to commence production. The Department is continuing to assess its ability to sustain its tactical air fleets, and may consider additional procurement of F-15E and F-16 aircraft if circumstances warrant.

Highlights of aircraft modernization programs are provided in Table IV-13.

Table IV-13

Aircraft Modernization Programs

	Current Dollars (Millions)			
	FY 1995 Actual	**FY 1996 Actual**	**FY 1997 Budgeted**	**FY 1998 Planned**
F-22				
RDT&E	2,280.6	2,164.9	2,003.0	2,215.0
Procurement	--	--	--	48.7
F/A-18 E/F				
RDT&E	1,248.7	823.8	360.5	157.0
Procurement	--	229.7	2,226.8	2,885.5
JAST				
RDT&E (Navy)	98.3	81.6	239.6	421.8
RDT&E (Air Force)	85.3	81.8	263.8	431.1
RDT&E (DARPA)	--	29.8	78.4	23.9
F-14				
RDT&E	34.1	17.8	9.9	11.3
Procurement	138.0	102.5	201.6	242.5
AV-8B				
RDT&E	9.6	26.2	16.9	11.1
Procurement	132.0	251.7	318.9	324.2
F/A-18 C/D				
RDT&E	29.5	45.3	43.1	43.2
Procurement	1,008.4	796.9	--	48.7
F-15				
RDT&E	20.3	162.1	143.1	114.5
Procurement	108.6	351.7	179.7	--
F-16				
RDT&E	133.2	166.1	142.2	118.9
Procurement	87.5	161.5	111.2	--

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 AIM-9 Sidewinder short-range missile. Air Force and Navy AMRAAM procurement continues throughout the FYDP, with improvements being made in a number of performance areas. The joint AIM-9X program is currently in the demonstration/validation phase of development; a decision on EMD will be

made at the end of this year, with production scheduled to begin in 2001. The increased capabilities 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.
- The extension of the effective reach of precision weapons far beyond the combat radius of the delivery platform, and with less exposure.

The 1997-2001 program reflects one principal change from the munitions modernization plan described last year -- the decision to acquire the Joint Air-to-Surface Standoff Missile (JASSM) to fill the gap left by last year's cancellation of the Tri-Service Standoff Attack Missile (TSSAM).

Highlights of munitions programs for FY 1997-2001 are presented below:

- Joint Air-to-Surface Standoff Missile. A long-range, survivable standoff weapon with excellent autonomous navigation capability and an autonomous terminal seeker. The standoff capability of this weapon will enable it to hold highly defended targets at risk while minimizing aircraft attrition. The program will enter the demonstration/validation phase in FY 1996; EMD will begin in FY 1998 and production in FY 2000. Maintaining low unit costs and minimizing life-cycle cost impacts are important goals in the development of this system.
- Joint Standoff Weapon (JSOW). A long-range, aerodynamically efficient glide weapon with excellent autonomous navigation capability. The initial (baseline) model, 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 a Sensor Fuzed Weapon (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 began in FY 1995. The baseline version will enter production in FY 1997, followed by the BLU-108 and the unitary variant in FY 2000.
- Sensor Fuzed Weapon. A tactical munitions dispenser containing 10 BLU-108 submunitions, each with four Skeet antiarmor warheads for top attacks on enemy armor. SFW is designed to achieve multiple kills against armored vehicles in day or night and in adverse weather. The system has been in low-rate production since FY 1992; a decision on full-rate production is scheduled for mid-FY 1996.
- Joint Direct Attack Munition (JDAM). Under the first phase of this program, existing general-purpose bombs will be provided with an improved guidance capability based on an inertial navigation system (INS) coupled with satellite-borne GPS data. INS/GPS guidance will permit the delivery of free-fall munitions in adverse weather, while improving bombing accuracy from medium and high altitudes. A subsequent product improvement program providing accuracy equivalent to that of today's laser-guided bombs is being assessed. As a result of JDAM's pilot program status, low-rate initial production has been accelerated nine months, to the latter half of

FY 1997. In October 1995, the Air Force awarded a contract for EMD and for the first 4,635 JDAM kits at an average unit cost of $18,000, less than half the original $40,000 estimate.

- 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 upgraded version of the weapon, known as the Standoff Land Attack Missile Expanded Response (SLAM-ER), will provide about a 60 percent increase in range over the baseline SLAM missile. The SLAM-ER incorporates enhancements in aerodynamic performance, survivability, anti-jam guidance, and hard-target capability, while providing for more rapid mission planning. About 500 SLAM missiles will be converted to the SLAM-ER configuration between FY 1997 and FY 2001.
- Wind-Corrected Munition 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). A decision has been made to procure 200 additional EMD units in FY 1997 to provide an early capability for near-term contingencies. Delivery of production units will begin in FY 1999.

Highlights of weapons modernization programs are provided in Table IV-14.

Table IV-14

Aviation Weapons Modernization Programs

	Current Dollars (Millions)			
	FY 1995 Actual	**FY 1996 Actual**	**FY 1997 Budgeted**	**FY 1998 Planned**
JASSM				
RDT&E	--	24.1	198.6	214.0
Procurement	--	--	--	--
JDAM [a]				
RDT&E	89.6	117.2	73.8	51.6
Procurement	--	--	23.0	101.5
JSOW [a]				
RDT&E	169.2	121.2	109.8	78.1
Procurement	--	25.5	72.5	113.0
SFW				
RDT&E	1.4	--	--	--
Procurement	112.7	165.5	131.1	140.2
SLAM				
RDT&E	59.0	52.0	22.3	29.3
Procurement	72.2	45.7	22.9	26.7
WCMD				
RDT&E	26.3	50.3	56.3	18.2
Procurement	--	--	--	16.8

[a] Includes both Navy and Air Force funding.

Dominating 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 System 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 and planned for many tactical aircraft, has been designated one of the Department's primary C3I data links. A planned follow-on, the Multifunctional Information Distribution System (MIDS), will be interoperable with allied equipment.

The U-2R force is being equipped with new engines to improve operational performance, and several sensor improvement programs are under way. The RC-135V/W Rivet Joint and EP-3E signals intelligence collection forces will complete their product improvements and will incorporate elements of the Joint Airborne SIGINT system, which will ultimately be used on all airborne reconnaissance systems.

The Department will make significant investments in UAVs during the 1990s. Short-range tactical UAVs have demonstrated substantial utility in regional deployments. For example, the Predator Medium-Altitude Endurance (MAE) UAV system, developed as an Advanced Concept Technology Demonstration (ACTD), has been used in the Balkans to help monitor weapons movements. The High-Altitude Endurance (HAE) UAV ACTDs initiated in FY 1994 will lead to even more capable demonstration systems that could be deployed during contingencies; these systems could be procured in larger quantities around the year 2001. In 1995, the Air Force formed its first operational UAV squadron to exploit emerging opportunities. Acquisition of additional Hunter UAV systems has been terminated in order to focus resources on acquiring MAE UAVs, a newer Tactical UAV system, and a more common UAV ground station architecture. Hunter systems already procured will be used by the Army for operations concept refinement and training.

Key elements of airborne surveillance and reconnaissance modernization programs are shown in Table IV-15.

Table IV-15

Airborne Surveillance and Reconnaissance Modernization Programs

	Current Dollars (Millions)			
	FY 1995 Actual	**FY 1996 Actual**	**FY 1997 Budgeted**	**FY 1998 Planned**
E-2				
RDT&E	49.7	53.0	79.1	41.5
Procurement	284.0	216.2	154.6	266.0
E-3				
RDT&E	81.5	91.4	57.6	29.8
Procurement	135.7	223.6	287.9	125.9
E-8				
RDT&E	166.3	167.1	207.3	206.4
Procurement	656.6	523.0	559.1	497.0
U-2				
RDT&E	2.3	23.7	29.2	39.4
Procurement	179.5	190.1	152.5	141.3
RC-135				
RDT&E	16.7	35.3	3.6	4.5
Procurement	290.2	188.9	160.2	200.4
Endurance UAV ACTDs				
RDT&E	195.5	216.2	193.1	210.6
Procurement	--	--	60.0	59.0
JTUAV/Tactical UAV [a]				
RDT&E	122.5	74.5	55.9	51.1
Procurement	172.4	41.5	--	75.0

[a] JTUAV in FY 1995; Tactical UAV from FY 1996 on.

CONCLUSION

Aviation forces have adapted well to the challenges of the post-Cold War security environment. The flexibility and worldwide deployability of these forces make them particularly valuable for providing an initial response to unanticipated contingencies.

Fighter/attack aviation forces face several key decisions in the immediate future. The forces acquired during the 1970s and 1980s -- in particular the large fleets of F-16s and early F/A-18s -- must be superseded in the foreseeable future by aircraft offering new capabilities. Although the future forces will be smaller than those of the past, new aircraft production will be needed in large numbers, beginning no later than about FY 2005. The Joint Advanced Strike Technology program has the potential to meet this need, and the Department has significantly increased the funding allocated to this program over the last year to help it achieve that potential. Further

delays imposed on the JAST program could be expected to have a serious impact on the future force structure.

There are risks in the planned approach. Large inventories of older aircraft, such as the F/A-18 A/C, are experiencing rising maintenance costs, yet must be retained in operation long enough to permit their orderly replacement about 15 years from now. It is uncertain that some of these older aircraft can be operated economically for such unprecedentedly long life spans. The Department continues to investigate hedges that could reduce these risks, including reactivation and refurbishment of older aircraft in secure storage. In the meantime, sustained funding for maintenance and improvement of the existing force is essential.

Chapter 21

MOBILITY FORCES

INTRODUCTION

Mobility forces are the air, sea, and ground systems that transport military personnel and materiel throughout the world. They include airlift and sealift, as well as road and rail systems. Airlift provides a rapid and flexible means of 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, deploying 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 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 an essential 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 would be key to the deployment and sustainment of U.S. forces in any MRC. 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. These first flights would deliver primarily aviation and light ground forces, plus some heavier ground elements. The remaining heavy combat forces would deploy by sea.

Intratheater mobility forces would move arriving forces to initial operating locations and support them over the course of the conflict, redeploying them as necessary to meet operational demands. In addition, intratheater forces contribute to other special missions, such as airdrops and medical evacuations.

Intervention and Peace Operations

Military interventions and peace operations, though smaller in scale than major conflicts, still place heavy demands on mobility forces. As in larger contingencies, mobility forces contribute

both to the deployment and sustainment of forces. Depending on the location, significant amounts of material must sometimes be moved, particularly if troops are sent to a region where the infrastructure is limited and host nation support is either lacking or not immediately available.

To cite two recent examples: mobility forces supported the deployment of the U.S.-led multinational force to Haiti, and subsequently supported the United Nations mission there. Between September 1994 and November 1995, U.S. transport aircraft flew more than 1,750 missions to Haiti, delivering approximately 24,000 short tons of cargo and 55,000 passengers. Mobility forces also are playing a crucial role in deploying and sustaining U.S. forces participating in Operation Joint Endeavor in the former Republic of Yugoslavia. In the first six weeks of this operation, U.S. transport aircraft flew more than 1,600 missions into Bosnia and Herzegovina, Hungary, and other staging locations throughout Europe.

Humanitarian Assistance

Mobility forces are often the 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. In Bosnia and Herzegovina, for example, following the reopening of the Sarajevo airport in September 1995, the United States conducted 87 airlift missions, delivering almost 1,000 short tons of food and supplies. Mobility forces also are employed in response to domestic emergencies. During April and May 1995, in the aftermath of the Oklahoma City bombing, U.S. military and commercial aircraft flew approximately 400 short tons of food and supplies to the city, along with more than 1,300 relief workers.

Overseas Presence

In the course of their own training, mobility forces move supplies on a regular basis to U.S. troops stationed overseas. Additionally, mobility forces are an integral part of military exercise programs. Exercises 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

Intertheater Mobility Forces

The 1992 Mobility Requirements Study (MRS) established mobility requirements for the post-Cold War era. It defined baseline requirements for intertheater (or strategic) mobility and proposed a long-range investment plan to meet them. Specifically, the study validated the need for 120 C-17 aircraft and called for the acquisition of additional medium-speed sealift vessels and afloat prepositioning ships.

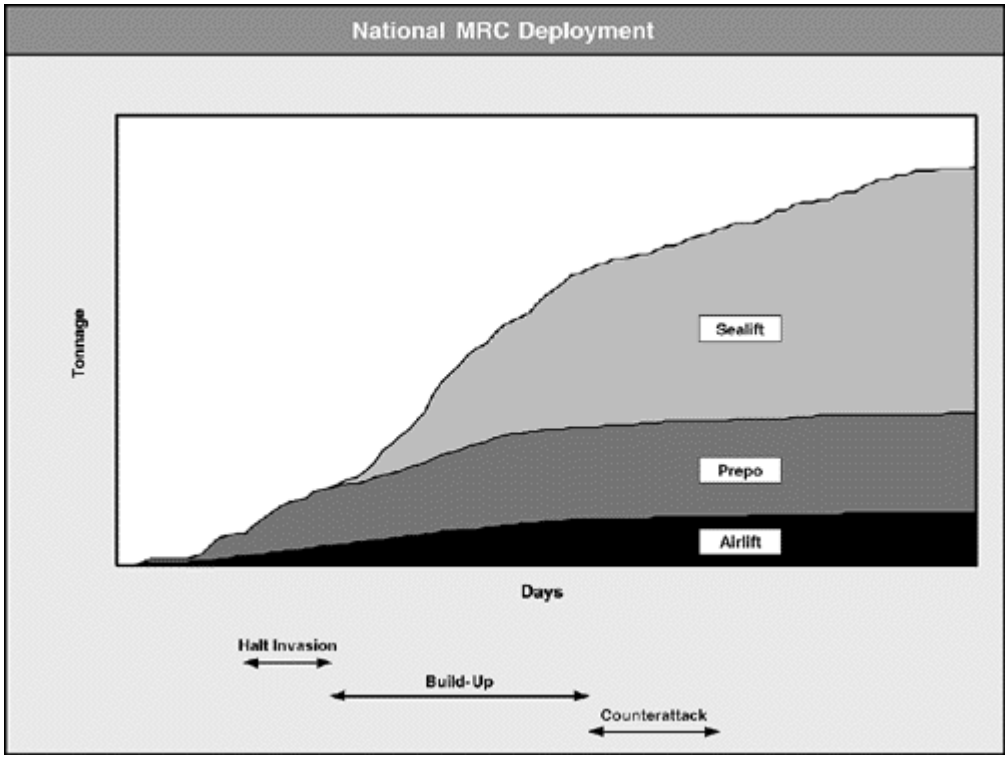
A follow-on study, conducted in 1994, updated the original MRS findings to reflect changes in force structure and warfighting strategy resulting from the 1993 Bottom-Up Review. The 1994 analysis -- known formally as the Mobility Requirements Study Bottom-Up Review Update, or MRS BURU -- reaffirmed the need for increases in key mobility components. In particular, it validated the original MRS recommendation for the procurement of additional ships for afloat prepositioning and for surge deployments of forces based in the continental United States (CONUS). The MRS BURU also examined intertheater airlift requirements in detail. Based on the study's findings, 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 overseas. The Department is continuing to evaluate prepositioning options, as well as other potential warfighting enhancements, that could result in changes to the airlift objective.

MOBILITY ROLES IN MRCS

The requirements established by the MRS BURU were based on an evaluation of mobility force needs for two nearly simultaneous MRCs. Mobility forces would be heavily involved in all phases of a major regional 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 follow-on forces. Studies and wargames have confirmed that the prompt availability of forces in a conflict theater is critical not only to the initial defense but to the successful execution of the entire warfighting strategy.

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.

Once the conflict had ended, mobility forces would begin returning U.S. troops to their regular operating locations at home and abroad. Mobility forces also would provide critical support for any residual forces that remained in the theater, delivering supplies and other material needed to sustain the forces' presence.



As the foregoing discussion shows, the three mobility force components -- airlift, sealift, and prepositioning -- complement each other in deploying and sustaining U.S. forces in conflict theaters. Airlift, augmented by prepositioning, provides for the rapid but limited delivery of combat units needed initially to halt an invasion. Sealift delivers the majority of heavy forces and accompanying supplies during the buildup of combat power in preparation for a counterattack. As the counterattack unfolds, sealift continues to deliver the bulk of material needed to sustain the forces in combat. The chart on the preceding page illustrates these points, showing the sequence in which mobility components are employed in a hypothetical MRC and the relative contributions of the individual components over time.

Intratheater Mobility Forces

As a follow-on to the MRS BURU, the Department is conducting an Intratheater Lift Analysis. This study will identify unit movement and sustainment requirements at the intratheater level, which in turn will lead to the definition of requirements for intratheater mobility forces, including aircraft and common-user trucks.

Operational Support Airlift

Operational support airlift (OSA) aircraft are used to meet wartime transport requirements of regional military commanders and the Service secretaries. OSA aircraft range in size from smaller, executive-style planes such as the C-12 and C-21 to mid-sized aircraft like the C-9. In conflict theaters, these aircraft move small, high-priority cargoes, such as critical medical supplies and spare parts, and provide transport for senior personnel managing theater operations.

Within the United States, OSA wartime missions support the mobilization of both active and reserve forces.

The 1995 report of the Commission on Roles and Missions concluded that the inventory of OSA aircraft should be reduced. In response to the Commission's observations, the Joint Staff evaluated the number and mix of OSA aircraft that would be needed to support two nearly simultaneous major regional conflicts. As a result of that assessment, the Department has established a requirement for 391 OSA aircraft, a reduction of 118 relative to today's force level. In addition, the Department is exploring ways to streamline OSA operations. The Joint Staff, the U.S. Transportation Command (USTRANSCOM), and the Military Services are evaluating options for consolidating the scheduling of OSA aircraft. As part of this effort, the Department is fielding and testing a new standard scheduling system -- the Joint Air Logistics Information System, or JALIS -- which will be used to coordinate the scheduling of the entire DoD OSA fleet.

FORCE STRUCTURE AND CAPABILITIES

The Department of Defense has a long-standing policy of relying on commercial transportation resources to the extent they are capable of meeting military requirements. For example, 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 commercial 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 and carry out missions in circumstances where commercial systems cannot respond or cannot do so quickly enough. In this way, mobility forces complement commercial transportation systems. Readiness for both the military and civilian sectors is maintained by using all mobility segments -- active, reserve, civilian, and industry -- in peacetime to support the large customer base of the U.S. government throughout the world.

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.

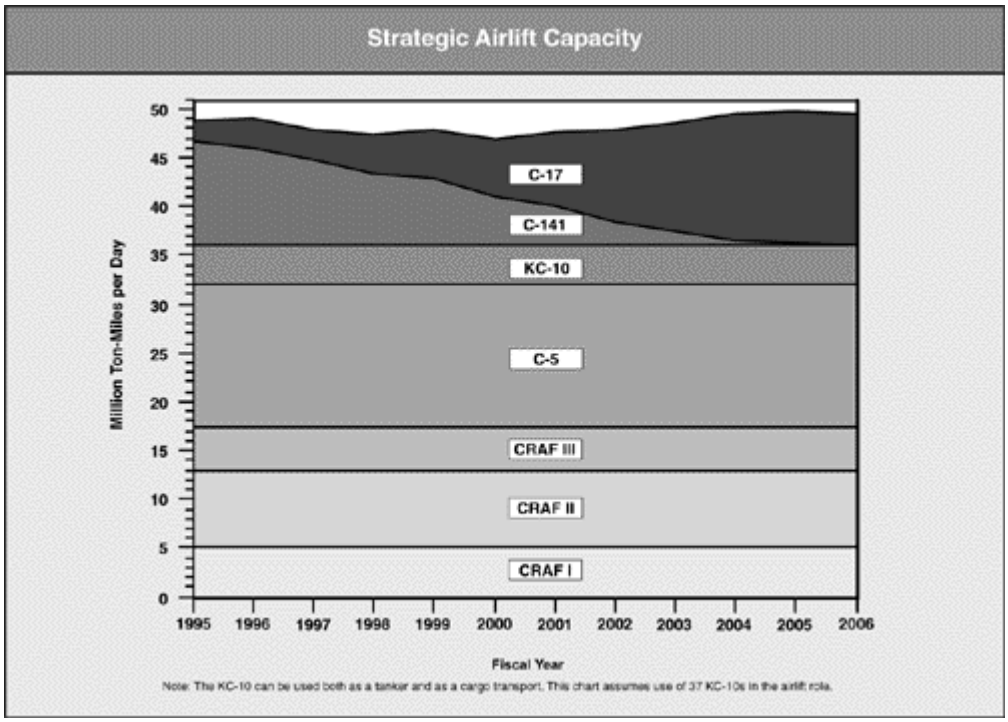
Calling up CRAF Stage I aircraft provides DoD access to about 10 percent of the passenger capacity in the long-range U.S. commercial fleet and 21 percent of the cargo capacity. With the addition of Stage II aircraft, those figures rise to 28 percent and 47 percent, respectively. Aircraft from Stage III bring the CRAF contribution, as a share of total U.S. long-range commercial aircraft capacity, to 50 percent for passengers and nearly 65 percent for cargo. All three stages of CRAF are activated by the Commander in Chief of USTRANSCOM, with the approval of the Secretary of Defense. Stage III aircraft are called on only for the most demanding military deployments. Fully activated, the CRAF fleet accounts for 93 percent of the total passenger

capacity in the U.S. airlift fleet, and for 32 percent of total cargo capacity. CRAF also provides a significant portion of intertheater aeromedical evacuation capability.

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 (including bulk cargo) that would have to be moved by air in a major regional conflict, 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, nor can they provide specialized capabilities, such as the rapid off-load required in combat situations. Commercial planes also require relatively long runways and special material-handling equipment and therefore cannot operate in austere airfields.

Military aircraft provide the full range of these capabilities. The FY 1996 military fleet consists of 104 (primary mission aircraft inventory, or PMAI) C-5s, 187 PMAI C-141s, 22 PMAI C-17s, and 432 PMAI C-130s. These aircraft are assigned to active, Air National Guard, and Air Force Reserve squadrons. The C-5s, C-141s, and C-17s in active squadrons are flown by both active and reserve associate crews; C-130s are flown by crews from the respective component -- active or reserve -- in which the aircraft are maintained.

The chart below shows the current and projected contribution of military and CRAF aircraft to total U.S. intertheater airlift capacity.



As these examples show, the reserve component plays a critical role in U.S. airlift operations. For contingencies not involving mobilization, reservists serving on a voluntary basis account for

roughly 30 percent of U.S. airlift crews. In a major regional conflict with timely mobilization, this share increases to almost 60 percent.

Aerial Refueling

The aerial-refueling fleet consists of 473 PMAI KC-135s and 54 PMAI 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 IV-16 shows the current and projected inventory of long-range tankers.

Table IV-16

Long-Range Tanker Aircraft (PMAI)

	FY 1995	FY 1996	FY 1997	FY 1998
KC-10	54	54	54	54
KC-135 [a]	478	472 [b]	472	472

[a] Includes active and reserve components.
[b] The reduction relative to FY 1995 reflects transfers from the operational inventory to meet training and depot maintenance needs.

Sealift

Sealift capacity comes from three sources: ships operating in commercial trade; commercial ships under long-term charter to the Defense 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 207 ships with military utility. These include 107 dry cargo ships, 98 tankers, and two passenger ships. Another 129 commercial vessels that could contribute to military missions -- 55 dry cargo ships, 67 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 for military purposes.

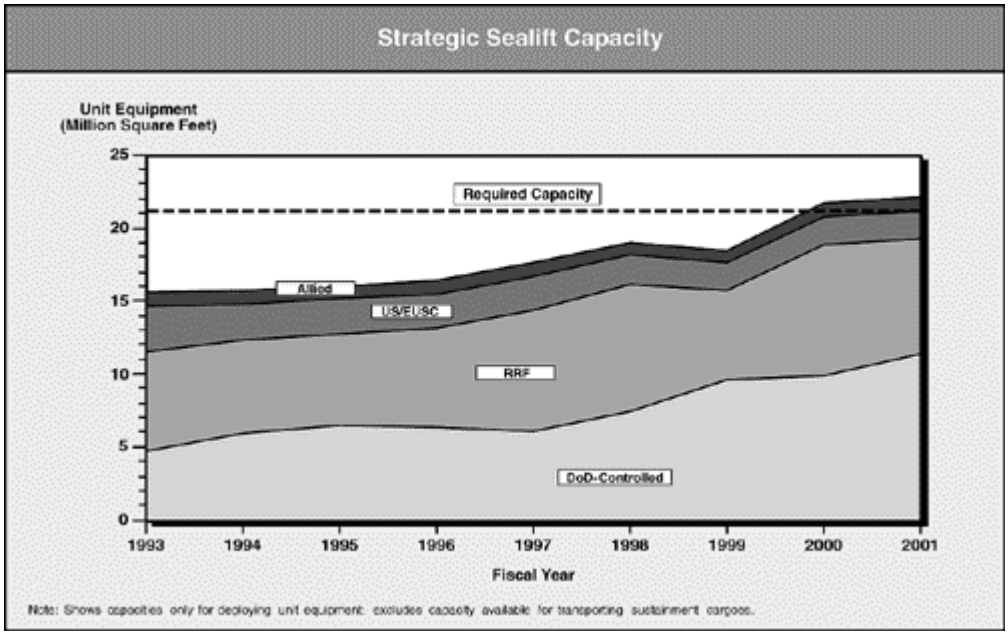
Currently, DoD is chartering eight dry cargo ships and nine tankers from commercial operators to transport military cargoes to locations not accessible via regular commercial routes. The number of ships under charter for this purpose varies little from year to year.

For more than a decade, the proportion of container ships 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 many types of unit equipment without the installation of adaptive devices. Even with those devices, the time required to deploy unit equipment in container ships taken from trade can be half again as long as that required on government-owned RO/RO ships -- a delay that is militarily unacceptable. Therefore, to meet the very demanding unit deployment timetables of regional contingencies, it is necessary to acquire RO/RO and similar ships and maintain them at high readiness levels.

Today, the government maintains 92 ships in reserve status for use in military operations. These ships are kept in varying degrees of readiness, with the majority available for deployment in four to 10 days. Of the 92 vessels:

- 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 to begin loading in three to four days.
- Two are aviation support ships -- floating maintenance facilities -- and another two are hospital ships, all ready to deploy in five days.
- The remaining 80 vessels are part of the Ready Reserve Force (RRF), available in four to 20 days.

The RRF is an important source of lift for military operations. The force includes both breakbulk and RO/RO cargo ships, as well as tankers specially configured to deliver fuel in damaged ports or over the shore.



A total of 92 vessels are maintained in the RRF -- 80 dry cargo ships, 10 tankers, and two passenger ships. Of these, eight cargo ships and two tankers are serving on an interim basis with the afloat prepositioning force and two cargo ships are supporting military exercises. The RRF is

managed by the Maritime Administration within the Department of Transportation. Funding for the force -- including ship acquisitions and fleet maintenance -- is budgeted by the Department of Defense. Expenditures on RRF vessels maintained in reserve status are financed through the National Defense Sealift Fund; the ships used for afloat prepositioning and exercises are funded through the Service operation and maintenance accounts.

The above chart 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 MRS BURU 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 enough capacity to meet the sustainment demands of two MRCs occurring nearly simultaneously.

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 34 ships for afloat prepositioning. Of these, 23 have been chartered from the commercial fleet, 10 come from the RRF, and one ship is government owned:

- 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 maintained continuously on station in the western Pacific, Indian Ocean, and Mediterranean Sea. From these locations, they can be quickly dispatched to the scene of a crisis, remaining offshore pending a decision to commit U.S. forces. The ships are organized into three squadrons, each carrying equipment and 30 days of supplies for a brigade-sized Marine Air-Ground Task Force, including an aviation element.
- · Eight RRF ships and six chartered vessels carry Army equipment and supplies. These ships, stationed in the Indian and Pacific Oceans, provide materiel for an Army armor brigade and selected combat support and combat service support units. Seven of the RRF vessels will be returned to reserve status when the large medium-speed roll-on/roll-off (LMSR) ships being procured for afloat prepositioning are delivered.
- The remaining seven ships carry munitions, medical material, and fuel. Four of these ships are under long-term charter to the Department of Defense; two are tankers tendered from the RRF; and one is a government-owned tanker.

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 MRS BURU.

Airlift Programs

Airlift investments in coming years will focus on replacing the aging fleet of C-141 intertheater aircraft. Under a plan announced in November 1995, the Department has decided to continue the C-17 program beyond the 40 aircraft previously authorized for procurement. Accordingly, the Department is budgeting for a total force of 120 C-17 aircraft. This decision was reached after a comprehensive review by the Defense Acquisition Board (DAB) of alternative airlift aircraft. Studies conducted for the DAB review concluded that substantially more than 40 C-17s would be needed to meet strategic and tactical mission requirements at an acceptable level of risk. Moreover, the studies showed that a 120-aircraft C-17 force would provide the greatest amount of flexibility in meeting airlift requirements, at a cost only marginally higher than the other alternatives that met the requirements.

The decision to continue C-17 procurement would not have been possible had it not been for the dramatic turnaround of the C-17 program. The program demonstrated significant improvements over the past two years in schedule performance and production quality; production costs also are now well understood and are under control. The C-17 recently completed the most rigorous evaluation of reliability, maintainability, and availability ever conducted on a military airlift aircraft, and its performance far exceeded expectations.

As a further result of the DAB review, the Department is examining options to strengthen the Civil Reserve Air Fleet as a complement to the C-17 force. Options under consideration include the possibility of offering incentives to commercial carriers to operate aircraft that have greater military utility than standard commercial designs.

Enhancements in intratheater capability will come both from the C-17 and from the introduction later in this decade of a new version of the C-130 tactical transport. The upgraded C-130J model will incorporate a redesigned two-crew-member flight station, a modern-technology engine and propeller system, and an integrated digital avionics subsystem. The C-130J also will offer savings in operating and support costs relative to the older C-130 models it is slated to replace. The first C-130J was completed in October 1995 and is currently undergoing flight tests. Low-rate production of the aircraft will begin in FY 1996.

The KC-135 tanker force also is being upgraded. A number of these aircraft are being equipped with a multipoint refueling system to enhance their ability to refuel Navy and Marine Corps, as well as NATO and other allied, aircraft in flight. The development phase of this program will be completed in FY 1997; plans call for a total of 33 multipoint refueling modification kits to be acquired by FY 2003.

Sealift and Afloat Prepositioning Programs

The MRS BURU validated a need for the acquisition of 19 LMSRs. As currently envisioned, the LMSR program will provide eight ships for afloat prepositioning of Army combat and support equipment, and 11 ships for transporting combat and support equipment of early-deploying heavy Army divisions. The amount of LMSR capacity dedicated to prepositioning may increase in the future if requirements dictate. The LMSR program is now under way, with five ships

(converted commercial vessels) scheduled for delivery in FY 1996-1997 -- a delay of roughly 14 to 17 months relative to previous plans. Three newly constructed ships will enter service in FY 1998. The FY 1997-2001 program includes almost $1.9 billion in ship construction funds for the LMSR program.

The acquisition of an additional prepositioning ship, funds for which were appropriated in FY 1995, will enhance the capability of the maritime prepositioning force. A requirement for at least two more ships has been validated. The Department will begin procuring these ships early in the next decade, after the higher-priority LMSR program has been completed.

The MRS BURU validated the need for an expansion of RO/RO capacity in 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 contains 31 such ships, including 14 used commercial RO/ROs purchased since the Gulf War.

At the Congress's direction, the Department is investigating a National Defense Features (NDF) program that would provide funds to make commercial ships more militarily useful. While an NDF program may provide for some sealift needs, placing high-readiness RO/RO vessels in the RRF is the most effective way to meet the Department's surge sealift requirement. The FY 1997 budget therefore includes funds to continue procuring RO/RO vessels for the RRF on the open market.

Programs for Prepositioning Ashore

The Army is in the process of restructuring its unit equipment prepositioning worldwide. Two heavy brigade sets of prepositioned equipment will be maintained in central Europe -- down from the nine sets prepositioned during the Cold War years. A third brigade set, in Italy, is available for use on NATO's southern flank or elsewhere in the region. In Southwest Asia, the first of two armor brigade sets planned for the region was prepositioned in Kuwait in FY 1995. A second set (with a division base) will be prepositioned in Qatar by about FY 2000. In addition, an armor brigade set will be prepositioned in Korea in FY 1997. These initiatives strengthen deterrence, shorten response times in crises, and enhance warfighting capability in these volatile regions.

The Air Force also is restructuring its unit equipment prepositioning programs. It is resizing and relocating equipment stocks, primarily war reserve materiel and vehicles, maintained in Europe and Southwest Asia. These measures will enhance capabilities for major regional conflicts and other contingencies.

The Marine Corps stores equipment and 30 days of supplies in Norway for a brigade-sized Marine Air-Ground Task Force. This materiel, which was prepositioned in the 1980s to reinforce NATO's northern flank, is employed in cold-weather training for U.S. forces as well as in NATO exercises. The Department currently is examining potential uses of the prepositioned materiel for limited contingency operations outside northern Europe.

CONCLUSION

A robust mobility capability is essential to meeting post-Cold War demands with fewer forces and a reduced permanent overseas presence. The FY 1997-2001 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. The mobility enhancements planned for FY 1997 and beyond, coupled with continued augmentation from the commercial sector, will ensure that the United States is able to respond promptly and effectively in situations ranging from natural disaster to major war.

Chapter 22

SPECIAL OPERATIONS FORCES

INTRODUCTION

Special Operations Forces (SOF) serve three purposes that are increasingly important in the current international environment. First, they expand the range of options available to decision makers confronting crises and conflicts below the threshold of war, such as terrorism, insurgency, and sabotage. Second, they act as force multipliers in support of conventional forces engaged in major conflicts, increasing the effectiveness and efficiency of the U.S. military effort. Finally, they expand national capabilities to react to situations requiring exceptional sensitivity, including noncombatant missions such as humanitarian assistance, security assistance, and peace operations.

SOF'S HERITAGE: ROLES AND MISSIONS

Special Operations Forces have a dual heritage. They are the nation's penetration and strike force, able to respond to specialized contingencies across the conflict spectrum with stealth, speed, and precision. They are also warrior-diplomats capable of influencing, advising, training, and conducting operations with foreign forces, officials, and populations. One of these two generic SOF roles is at the heart of each of the following special operations missions.

- Direct Action (DA). SOF units may conduct raid, ambush, direct assault, obstacle clearance, and antiship operations in pursuit of important targets located within hostile or denied territory.
- Special Reconnaissance (SR). Special Reconnaissance is the conduct of environmental reconnaissance, target acquisition, area assessment, post-strike assessment, emplacement and recovery of sensors, or support of Human Intelligence (HUMINT) and Signals Intelligence (SIGINT) operations.
- Unconventional Warfare (UW). Unconventional Warfare involves working with 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 (FID). SOF train, advise, and assist host nation military, paramilitary, police and other civilian forces in support of programs designed to free and protect a society from lawlessness, subversion, and insurgency.
- Civil Affairs (CA). Civil Affairs are the activities of a commander that establish, maintain, influence, or exploit relations between military forces and civil authorities, both governmental and nongovernmental, and the civilian populace in a friendly, neutral, or hostile area of operation in order to facilitate military operations and consolidate operational objectives. Civil affairs may include performance by military forces of activities and functions normally the responsibility of local government. They may also occur, if directed, in the absence of other military operations.

- Psychological Operations (PSYOP). Psychological Operations are operations to influence the behavior, attitudes, and emotions of target foreign audiences.
- Combatting Terrorism (CBT). This interagency activity encompasses actions, including antiterrorism (defensive measures taken to reduce vulnerability to terrorist acts), and counterterrorism (offensive measures taken to prevent, deter, and respond to terrorism), taken to oppose terrorism throughout the entire threat spectrum. The primary mission of SOF in combatting terrorism is to apply highly specialized capabilities to preempt or resolve terrorist incidents abroad.
- Counterproliferation (CP) of Weapons of Mass Destruction (WMD). SOF will support CINCs, country teams, and other government agencies in their CP strategies to prevent proliferation, deter the use of NBC weapons, and defend against their use. SOF can conduct or support special reconnaissance or collect intelligence and assess WMD capability. SOF will maintain a robust capability to locate and destroy delivery systems and supporting infrastructure.
- Information Warfare (IW)/Command and Control Warfare (C2W). IW/C2W is an emerging SOF mission: the exploitation, dominance, or destruction of an enemy's information system while maintaining the integrity of SOF systems from attack.
- Collateral Activities. SOF's collateral activities are security assistance, counterdrug activities, countermine activities, humanitarian assistance, search and rescue/personnel recovery, special activities, and coalition support. In these areas, SOF share responsibility with other forces as directed by geographic combatant commanders.

MAXIMIZING SOF'S EFFECTIVENESS IN SUPPORT OF DEFENSE STRATEGY

To support the National Security Strategy of Engagement and Enlargement, Special Operations Forces provide decision makers with increased options for achieving the national military objectives of promoting stability and thwarting aggression. To realize their full potential as strategic assets, SOF receive national level oversight to ensure their full integration into planning for conventional operations and interagency planning.

Skillful integration of SOF with conventional forces allows SOF to be a force multiplier in conventional operations. DoD is improving SOF interoperability with conventional forces and ensuring SOF's inclusion in strategic planning, joint training, interagency exercises, and DoD educational curricula.

Special Operations differ from traditional military operations in degree of political risk, their often unconventional mode of employment, their independence from friendly support, and their dependence on detailed intelligence and indigenous assets. For these reasons, some SOF missions carry an exceptionally high degree of physical risk. Because of the political sensitivities surrounding many SOF missions, where failure can damage national prestige, close coordination at the interagency level between SOF and U.S. government agencies is necessary. Close interagency coordination maximizes SOF effectiveness in the political-military environment short of war.

SOF AND REGIONAL DANGERS -- MAJOR REGIONAL CONFLICTS

Special Operations Forces are force multipliers for U.S. conventional forces combatting regional aggression. SOF contribute 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, contributing 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 between 50,000 and 80,000 enemy surrenders. Active and Reserve component Civil Affairs units managed displaced person and refugee operations and distributed humanitarian assistance, supplies, and services. Reserve CA also assisted Kuwaiti government ministries in planning and executing the immediate post-conflict restoration.

Because of their language skills and regional orientation, Special Operations Forces are particularly well suited to conventional coalition warfare. For example, in Operation Desert Storm, SOF personnel were deployed as liaison officers to multinational staffs under the tactical control of the Commander in Chief of U.S. Central Command. Their in-depth knowledge of the coalition members, language, and militaries allowed them to successfully link the CINC to each member of the coalition. General Norman R. Schwarzkopf referred to this contribution as the glue that held the coalition together.

SOF AND THE DANGERS POSED BY WEAPONS OF MASS DESTRUCTION

The proliferation of WMD 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 theater WMD threat, SOF can assist in deterring, destroying, or defending against it. Psychological Operations 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 weapons, storage facilities, and command and control nodes. SOF special reconnaissance capabilities can contribute to the defense against WMD threats by providing real-time intelligence unavailable from other sources.

SOF AND REGIONAL DANGERS -- LOW INTENSITY CONFLICT

Special Operations Forces play an important role in low intensity conflict because of the unique capabilities resident in SOF and the special character of low intensity conflicts. Low intensity conflict is a particularly challenging area for the United States, because it encompasses a range of activities that weaken regional security and undermine the ability of the U.S. to accomplish its objectives. U.S. efforts to counter low intensity threats do not focus on traditional military objectives. They are not driven by the requirement to destroy enemy forces or capture terrain, but rather by the need to establish or reestablish an environment conducive to regional or international stability without resorting to the political, economic, and military risks of war. Terrorism, lawlessness, 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.

SOF AND THE CHALLENGES OF DEMOCRATIZATION

Many of the skills in the Special Operations Forces inventory are directly applicable to support friendly, democratic regimes. With their linguistic ability and cross-cultural sensitivities, SOF can quickly establish an effective working rapport with foreign military and paramilitary forces and, when required, government officials. Specifically, SOF (especially civil affairs, psychological operations, and Special Forces (SF)) can assess appropriate host nation projects, conduct disaster or humanitarian assistance planning seminars, and assist interagency coordination, foreign liaison, and public information programs. Operation Uphold Democracy is a classic example of how unique SOF language and cultural skills can be successfully applied in the initial stages of a peacetime military campaign plan. In Haiti, SOF performed a number of key functions. During the peak of the multinational force phase of the operation, there were approximately 1,350 SOF personnel operating in small teams, based in 30 population centers throughout Haiti. From those centers, SOF visited over 500 towns and villages, where they were essential to establishing a safe and secure environment.

Some military units, especially combat support and combat service support units -- such as engineer or medical units -- and even some civilian agencies benefit from having civil affairs, psychological operations, or SF personnel attached for overseas peacetime missions. Prior to deployment, SOF personnel 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 populations.

CURRENT AND RECENT OPERATIONS

The sensitivity of Special Operations precludes a discussion of most specific 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.
- SOF successfully applied language, cultural, and organizational skills in support in Operation Uphold Democracy in Haiti, helping restore stability, democracy, and the rule of law.
- SOF assisted the UN-sponsored humanitarian effort in the former Republic of Yugoslavia during Operation Provide Promise (July 1992 to present). SOF also supported NATO efforts in combat search and rescue as part of Operation Deliberate Force.
- PSYOP and Civil Affairs specialists are assisting each of the theater unified commands in planning for democratization support missions.
- SOF continue to support U.S. counterdrug operations in Latin America. SOF trained and provided expert advice to host-nation armed forces and police dedicated to the counterdrug mission, primarily through exercises, joint and combined exercise training programs, and training teams. SOF teams conducted counterdrug missions in support of

the Drug Enforcement Agency, the U.S. Information Agency, and U.S. country teams' narcotics affairs staffs.

The most telling benchmark of SOF's 1995 operations is the extremely high operational tempo of overseas deployments. SOF conducted over 2,765 deployments (over 3,650 personnel) to 137 countries to accomplish tasks in their primary mission areas. These numbers reflect a 23 percent increase over 1994 deployments.

FORCE STRUCTURE

Special Operations Forces are prepared to operate worldwide and across the spectrum of conflict. Approximately 46,000 active and Reserve Component personnel from the Army, Navy, and Air Force are assigned to U.S. Special Operations Command (USSOCOM). SOF are organized into three Service components and a joint command. In actual operations, Service component units are normally employed as part of a joint force by the theater CINCs through their subordinate unified commands, the theater Special Operations Command (SOC). The SOC normally forms a Joint Special Operations Task Force (JSOTF), which may be employed independently or in support of a larger Joint Task Force (JTF). Psychological operations or civil affairs units may be assigned as part of a JSOTF or a JTF, or as a separate Joint Psychological Operations Task Force (JPOTF) or a Joint Civil-Military Operations Task Force (JCMOTF), respectively.

Army Special Operations Forces include Special Forces (Green Berets), Ranger, Special Operations Aviation (SOA), PSYOP, CA, signal, support, and headquarters units under the U.S. Army Special Operations Command (USASOC). Army Special Forces are organized into five active and two Army National Guard groups. The Ranger regiment consists of three active 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 U.S. Army Reserve (USAR). The CA force structure consists of three USAR CA commands, nine USAR CA brigades, 24 USAR CA battalions, and one active duty CA battalion. 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 theater unified commands. NSW forces are organized into two Naval Special Warfare Groups and two Special Boat Squadrons. Each Naval Special Warfare Group is composed of three Sea, Air, Land (SEAL) Teams with ten platoons and a SEAL Delivery Vehicle (SDV) Team. Also assigned to each of the Groups are Naval Special Warfare Units, which are small command and control elements located outside CONUS to support NSW forces assigned to theater SOCs or components of naval task forces. The Special Boat Squadrons and their subordinate Special Boat Units have a variety of small boats. The last of 13 programmed Cyclone Class Coastal Patrol ships was delivered in January 1996. The 84-foot Mark Five Special Operations Craft (Mark V SOC) has begun initial deliveries with two (of 20 total) craft delivered in August 1995. Additionally, several nuclear attack submarines are configured to carry Dry Deck Shelters for launching SDVs.

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. Within these units are Special Operations squadrons, some of which can perform long-range infiltration, aerial refueling, resupply, or exfiltration missions deep within sensitive or enemy held territory. Some squadrons can conduct PSYOP leaflet drops, or broadcast radio or television signals, while other squadrons provide close air support, interdiction, and armed escort capabilities. These aircraft support both SOF and conventional forces.

COMMAND RELATIONSHIPS

The DoD Reorganization Act of 1986, as amended by the National Defense Authorization Act of 1987, mandated unique relationships for command, control, and oversight of SOF. The act directed the establishment of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (ASD(SO/LIC)) to serve as the senior civilian advisor to the Under Secretary of Defense for Policy and to the Secretary of Defense on matters pertaining to special operations and low intensity conflict. The act also directed the establishment of the United States Special Operations Command (USSOCOM) and assigned it several service-like responsibilities, including programming, budgeting, and acquisition responsibilities. The policy and resource oversight responsibilities of ASD (SO/LIC) and the service-like responsibilities of USSOCOM create a relationship which is unique within the Department of Defense. This relationship facilitates SOF's responsiveness and adaptability to the needs of the National Command Authorities in the changing national security environment.

SOF THEMES FOR THE FUTURE

Recognizing that the demand for forces to selectively respond to diverse regional concerns will be greater than ever, the following themes will continue to guide the SOF community:

- Ensure maximum flexibility consistent with full accountability. SOF missions are fluid, shaped by political context and tactical developments requiring modifications and expediencies. Adherence to rules of engagement and responsiveness to military and civilian authority are paramount.
- Encourage unorthodox approaches and unconventional techniques that bring flexible thinking and innovation in addressing unconventional security threats.
- Invest in science and technology to maintain technical superiority in weaponry, materiel, and delivery systems.
- Stress SOF utility for forward-basing, quick deployment, and adaptability to regional contingencies. The regional orientation of SOF is an essential ingredient of success.
- Continue to integrate SOF with conventional forces and other U.S. government agencies to further enhance SOF's ability to support their principal customers: the geographic CINCs, U.S. ambassadors and their country teams, and other government agencies.
- Design force structure to reflect the mix of SOF missions. As the sophistication of adversaries grows and the nature of SOF missions evolve, special operations activities may require greater specialization in training as physical and technical requirements increase. The linguistic, cultural, and political needs of the training and advisory mission will increase as the regional security environment becomes more complex.

- Ensure 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

Special Operations Forces are particularly suited to many new activities which will flow from the National Security Strategy. Many of these missions require traditional SOF capabilities, while others such as counterproliferation and information warfare are relatively new and are the subject of developing SOF doctrine. Operations of the late 1980s and early 1990s have proven that SOF are invaluable as facilitators and peacetime operators, as well as strike troops. In order to be as effective as possible, SOF face two major challenges: they must integrate -- with conventional forces, other U.S. agencies, friendly foreign forces, and other international organizations (United Nations, Red Cross, etc.) -- yet they must preserve the autonomy necessary to protect and encourage the unconventional approach that is the soul of special operations. This flexibility will facilitate meeting the other major challenge of the 1990s -- to develop capabilities and perceptions to enable SOF to conduct operations successfully in support of peacetime objectives.

Chapter 23

SPACE FORCES

INTRODUCTION

The United States has led the world in the use of space for over three decades. A primary factor in this leadership has been a successful national security space program. The United States will conduct activities in space necessary for strengthening and maintaining national security. DoD space forces will provide the means to exploit and, if required, control space to assist in the successful execution of the National Security Strategy and National Military Strategy.

SPACE FORCES AND NATIONAL DEFENSE

Over the last decade, space forces have emerged as a major element of U.S. military power. Taken together, each unique space system contributes to the overall capability of space forces to support terrestrial forces. U.S. utilization of these space systems has evolved from an initial focus on providing peacetime support for national decision makers and strategic nuclear operations to more extensive integration into overall force structure and broader application in support of the warfighter.

Space systems provide a comparative national advantage for the United States. U.S. preeminence in the military uses of space during the Cold War contributed significantly to accomplishing America's national security objectives. Achieving post-Cold War objectives in the most effective and efficient way requires that U.S. space capabilities be fully utilized for national defense. Space systems help confer a decisive advantage upon U.S. and friendly forces in terms of combat timing, battlespace awareness, operational tempo, synchronization, maneuver, and the integrated application of firepower.

Space systems are an integral part 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 U.S. space capabilities. Space forces help to provide unprecedented global situational awareness to identify and respond to regional threats anywhere in the world. Space forces thus help ensure that hostile actions will be discovered by the United States and may 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 allies, and friends. Space systems perform global monitoring and are often the first to spot impending conflicts and thereby allow diplomatic actions to avert war. Space systems thus are critical to the ability of the United States to sustain a credible deterrent posture.

SPACE COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C4I) AND THE REVOLUTION IN MILITARY AFFAIRS

Advances in technology are fundamentally altering the conduct of modern warfare. Driven primarily by improvements in information collection, processing, and transmission technology, this revolution will have dramatic impact on military operations. The full impact of these technological improvements on military operations will only be realized if these technologies are normalized, operationalized, and integrated into the structure of the U.S. armed forces.

Space systems will contribute greatly to the revolution because of the unique capabilities they provide for intelligence, surveillance, and reconnaissance and command, control, communications, and computers. In particular, space systems provide:

- Near real-time intelligence, surveillance, and reconnaissance (ISR), targeting, environmental monitoring, and tactical warning/attack assessment in all-weather, day and night, for superior battlespace awareness.
- Instantaneous, secure battle management, C4 for rapid and coordinated application of force for maximum effect.
- A global three-dimensional grid reference system for standardizing the locations of force positions, directions, and objectives to facilitate the flexible, discriminate application of force.
- · Accurate navigation, positioning, timing, and velocity data for precision weapons delivery to reduce the level of force required to achieve an objective with minimum risk, casualties, and collateral damage.

The utilization and control of space will enable the United States to establish and sustain dominance over an area of operations. Establishing such dominance will be the key to achieving success in a future crisis or conflict. It will greatly enhance the ability of U.S. and coalition forces to fight on favorable terms by taking the initiative away from an adversary. In short, space-based systems help to improve operational effectiveness, efficiency, and interoperability; maintain technological superiority; and support worldwide deployment, sustainment, and operations of U.S. military forces. By providing almost global coverage, space systems help to compensate for reductions of forward positioned infrastructure and provide ready, in-place capabilities to support U.S. forces worldwide.

ENHANCING WARFIGHTER OPERATIONS

Space systems played important roles in every contingency where U.S. forces were engaged over the past year. The combination of space-based navigation, weather, communications, reconnaissance, and multispectral imagery are providing critical support to U.S. forces in the Former Republic of Yugoslavia and were a key asset in the rescue of a downed U.S. airman. In Haiti, the ultra-high frequency (UHF) Follow-On, the Advanced Communications Technology Satellite (ACTS), and Milstar I military satellite communications systems provided 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 were also integrated into joint and Service exercise schedules. U.S. Space Command components are actively engaged in supporting each combatant commander. Space systems directly supported exercises including Ulchi Focus Lens, Atlantic Resolve, Roving Sands, Unified Endeavor, Bulwark Bronze, Keen Edge, Tempo Bravo, and Cobra Gold. 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.

SPACE FORCE STRUCTURE

DoD space force structure is comprised of space systems and capabilities in four mission areas: space support, force enhancement, space control, and force application.

Space Support

The space support mission area includes capabilities for launching and deploying space vehicles, maintaining and sustaining spacecraft on-orbit, and deorbiting and recovering space vehicles as required. The Eastern Range at Cape Canaveral Air Force Station, Florida, and the Western Range at Vandenberg Air Force Base, California, are the nation's primary space launch facilities. DoD employs Pegasus, Taurus, Delta II, Atlas II, and Titan II and IV space launch vehicles as well as Inertial Upper Stage and Centaur upper stage boosters to deliver payloads into orbit. Centralized command and control of DoD satellites is provided by the 50th Space Wing at Falcon Air Force Base, Colorado. The Air Force Satellite Control Network provides telemetry, tracking, and control for most DoD satellites. In addition, the Naval Satellite Operations Center at Point Mugu, California, also provides support for Navy satellite systems. As a backup, Air Force Transportable Mission Ground Stations can provide mobile command and control capabilities for certain DoD satellites.

Force Enhancement

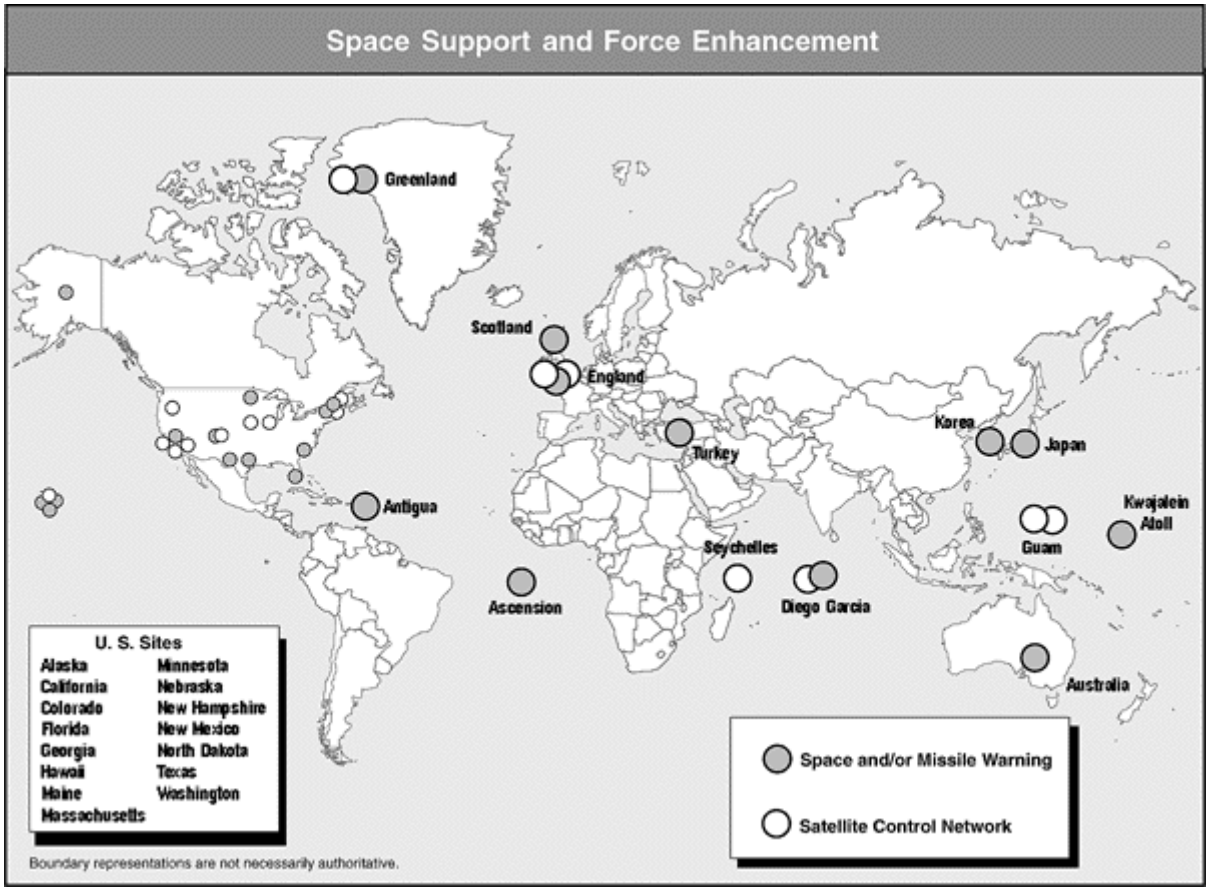
The force enhancement mission area includes capabilities for reconnaissance and surveillance, targeting, tactical warning and attack assessment, communications, navigation, and environmental monitoring. Space-based reconnaissance and surveillance systems support virtually all DoD activities. The National Reconnaissance Office (NRO), a joint activity of DoD and the Intelligence Community, provides spaceborne assets needed to acquire intelligence worldwide for such purposes as supporting the planning and conduct of military operations and monitoring arms control agreements.

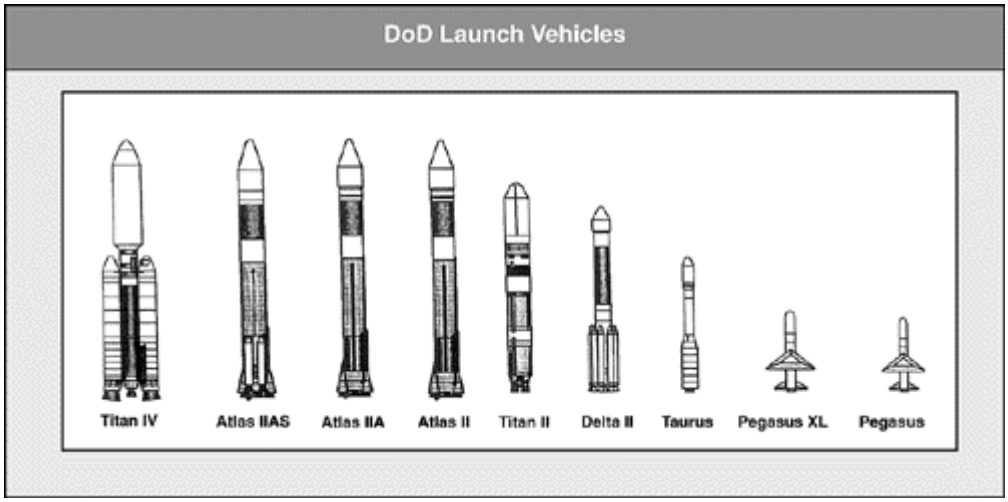
Table IV-17

Space-Based Forces, FY 1996-97 (Projected)

Satellite Systems	Mission	FY 1996			FY 1997			
		On-Orbit (Primary Mission Capable)	Avail-able for Launch	In Produc-tion Pipeline	On-Orbit (Primary Mission Capable)	Avail-able for Launch	In Produc-tion Pipeline	Unit Cost ($M)
Defense Support Program	Missile Warning	[a]	4	2	[a]	4	1	$396.9 [b]
Global Positioning System	Navigation	24	5	20	24	6	17	$94.6 [b]
Nuclear Detonation (NUDET) Detection System	Nuclear Detonation Detection	24	5	20	24	6	17	$8.3 [d]
Defense Meteor-ological Satellite Program	Weather and Environ-mental Surveil-lance	2	3	4	2	6	1	$209.1 [b]
Defense Satellite Communi-cations System	Communi-cations	5	5	0	5	5	0	$70.4 [c]
Milstar	Communi-cations	2	0	4	2	0	4	[a & b]
Fleet Satcom System	Communi-cations	4	0	0	4	0	0	N/A [b]
UHF Follow-On	Communi-cations	5	1	3	6	1	2	$184.5 [b]

NOTES:
[a.] Data is classified.
[b.] As reported in Selected Acquisition Report (SAR).
[c.] Unit Cost for latest Operational Block (costs not reported under SAR).
[d.] FY 1997 costs reflects unit cost of latest unit procured, adjusted to FY 1997 dollars for comparison.





Through Service Tactical Exploitation of National Capabilities (TENCAP) programs and direct links, selected national space systems provide near real-time data and exploited products to combatant commanders and operational forces. Emphasis is on the provision of sensor-to-shooter information flow directly to the tactical level.

DoD operates space and ground-based systems to provide the National Command Authorities (NCA) with timely, reliable, and unambiguous tactical warning and attack assessment data for

force survival or retaliatory decisions against air, space, or ballistic missile threats. The space-based Defense Support Program provides global detection and reporting of missile and space launches. A network of ground-based radars provides detection, tracking, and warning of ballistic missile attack against the United States, Canada, the United Kingdom, and the European continent. In addition, the NUDET Detection System provides timely, reliable, and accurate detection, locational fixes, and yield readings of nuclear detonations for strike, damage, and attack assessments; force management; and test ban monitoring.

Space-based military satellite communications (MILSATCOM) systems provide communications services for numerous DoD and other U.S. government users. The Defense Satellite Communications System (DSCS) provides super high frequency secure voice and high data rate transmissions for worldwide military command and control, crisis management, relay of intelligence and early warning data, treaty monitoring, diplomatic and Presidential communications, and communications support for deployed tactical forces. DSCS also provides limited anti-jam worldwide connectivity for critical functions such as tactical warning and attack assessment and Emergency Action Message dissemination for the NCA, Joint Staff, command centers, and other users.

The Milstar satellite system provides extremely high frequency (EHF) voice and low-to-medium data rate transmissions for worldwide C4I support to the warfighting CINCs. Additionally, Milstar provides antijam, survivable, and enduring connectivity for tactically deployed forces and can transmit Emergency Action Messages and tactical warning and attack assessment information.

The Fleet Satellite Communications and UHF Follow-On systems provide UHF and EHF communications for mobile forces, including fleet broadcast services and control communications to designated Single Integrated Operational Plan/nuclear-capable users for Emergency Action Message dissemination, force direction, and force reporting. Air Force satellite communications also are used by a limited number of high priority non-nuclear users for operational missions, contingency and crisis operations, and exercise support.

The NAVSTAR Global Positioning System (GPS) provides all-weather, day/night, three dimensional, precise navigation, positioning, timing, and velocity data to land-based, seaborne, and airborne U.S. and allied forces, as well as other national security, civil, and commercial users. GPS enhances force coordination, command and control, target mapping, the probability of target acquisition, flexible routing, and weapons delivery accuracy, especially at night and in adverse weather. The Department of Defense announced Full Operational Capability for military GPS applications on July 17, 1995 based upon successful completion of full operational testing. The 24-satellite constellation is providing consistent, reliable service to a broad and rapidly growing community of military and civil users.

DoD employs a combination of military, civil, and commercial space systems to help meet requirements for environmental monitoring. Land remote sensing systems provide multi-spectral imagery (MSI) of the earth for numerous DoD activities as well as other national security, civil, and commercial users. MSI data is a critical source for producing mapping, charting, and geodesy (MC&G) products. MSI products and data are used for military planning and targeting,

MC&G, hydrography, counternarcotics operations, and monitoring arms control agreements. In addition, the GEOSAT Follow-On system will provide real-time oceanographic topographical data such as wave heights, currents, and fronts to naval users when it becomes operational. The Defense Meteorological Satellite Program collects and disseminates global visible and infrared cloud cover imagery and other meteorological, oceanographic, and solar-geophysical data for operational forces. DoD augments this dedicated military space system by using National Oceanic and Atmospheric Administration (NOAA) and international meteorological satellite systems.

Space Control

The space control mission area includes capabilities for surveillance of space, space system protection, prevention, and negation. The Space Surveillance Network provides space object cataloging and identification, satellite attack warning, timely notification to U.S. forces of satellite flyover, space treaty monitoring, and scientific and technical intelligence-gathering. DoD space systems are designed, developed, and operated to assure the survivability and endurance of space mission capability in peace, crisis, and through appropriate levels of conflict commensurate with national security requirements. The survivability of DoD space systems is enhanced, as appropriate, through such protection measures as satellite proliferation, hardening, communications cross-links, and communications security protection. Military missions are also enhanced by diplomatic, legal, or military measures to preclude an adversary's hostile use of space systems and services. Space system negation can be accomplished by methods to counter the territorial or space-based elements of a space system or their data linkages.

Force Application

The force application mission area would include capabilities for space-based ballistic missile defense capabilities and power projection. ABM Treaty compliant research in this area is aimed at developing advanced follow-on technologies offering promise for improved performance in both tactical and strategic defenses as insurance against possible future threats. The DoD space force structure does not include any capabilities for power projection.

FUNDING AND MODERNIZATION

Major changes have occurred in the international environment which require a refocusing of DoD space efforts. These changes include transformation of the international security environment, advances in military technology, increased reliance by the warfighters on space forces, and global proliferation of space systems and services.

Specifically, changes in the international environment have refocused DoD space efforts on the normalization, operationalization, and integration of space capabilities into the overall force structure of the warfighter. Since space systems directly support the revolution in ISR and C4, it is imperative that their capabilities be recognized and used effectively. This includes normalizing space operations and integrating them into the execution and operational structure of the armed forces.

Funding for DoD space programs has remained relatively stable over the past four years despite reductions in the overall defense budget. The funding changes from FY 1992 to FY 1995 reflect a course correction due to changes in strategic defense requirements resulting from the end of the Cold War and lessons learned from Operation Desert Storm. Growth in outyear funding reflects development and procurement of next generation communications, navigation, meteorological, and launch systems to maintain and modernize U.S. space systems to meet national security requirements.

SPACE LAUNCH

Access to space is a key enabling capability for DoD to effectively use space. Although current U.S. space launch systems meet DoD needs, they are becoming increasingly costly to use. The President's National Space Transportation Policy 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. DoD objectives for this effort are to reduce costs while maintaining capability, reliability, operability, responsiveness, and safety.

To implement this guidance, DoD has initiated an Evolved ELV (EELV) 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 medium-lift EELV is currently planned for first launch in 2001 and the heavy-lift version in 2005. Both would be based on a core system which would lead to a cost-effective family of vehicles.

SPACE-BASED INFRARED SYSTEM

DoD is proceeding with the development of a new constellation of infrared detection satellites consisting of highly elliptical, geosynchronous, and low earth orbiting elements. The primary purpose of the Space-Based Infrared System program is to be the follow-on to the Defense Support Program and provide an integrated system supporting missile warning, missile defense, technical intelligence, and battlespace characterization. The planned first launch of this new system is 2002. In addition, a flight demonstration of the low earth orbit satellites will be conducted to validate the operational concept and to investigate further phenomenologies in additional infrared frequencies. Deployment of the low-altitude component may also permit the design of the high-altitude constellation to be simplified in later production blocks.

MILITARY SATELLITE COMMUNICATIONS

The Department of Defense is conducting a comprehensive study on a future Military Satellite Communications (MILSATCOM) architecture which will provide a road map for systems development and investment strategy. Two systems which will modernize MILSATCOM in the 21st century are Milstar and the Global Broadcast Service (GBS).

Defense planning has emphasized the increased tactical needs of U.S. armed forces for space-based communications. To implement this guidance, the emphasis of the Milstar program is to provide medium data-rate communications that will provide survivable, difficult to detect, jam-resistant communications to tactical forces worldwide. This new emphasis was embodied in a redesign of the Milstar II system and a reduction of the constellation size for the Milstar system from six to four satellites. Additionally, the Department will field an interim polar extremely high frequency (EHF) capability to provide high latitude EHF coverage.

The Department will seek to provide advanced EHF capabilities similar to the current Milstar system on a platform that can be launched on a future medium-lift vehicle vice the heavy-lift vehicle required today. This program will lead to satellite systems which could satisfy requirements for mid and high latitude EHF communications needs.

With affordability a key concern, the Department's MILSATCOM architecture study looks closely at not only military system solutions, but also at commercial technology. A prime example of the latter is the commercial development of direct television satellite broadcast systems. This technology created DoD-wide interest in GBS as a possible solution to capacity shortfalls and efficient use of bandwidth.

The Joint Requirements Oversight Council recently approved the Joint Mission Needs Statement for the GBS. The GBS would become a part of the overall MILSATCOM architecture to meet the warfighter's need for increased worldwide, high capacity communications throughput capability and support. The GBS is a new program initiative which has recently been approved for implementation. It capitalizes on commercial direct broadcast satellite technology to provide high data rate information to U.S. warfighters. GBS is expected to fill two key warfighter needs. First, with high data rate service to many users at once, GBS can reduce the need to send information more than once. Secondly, GBS provides for very high delivery rates to very small user terminals. No other currently fielded DoD satellite system is capable of providing this type of capability. Initial operational capability is feasible by 1998.

Communications are currently spread among three frequency bands on as many as six satellite systems. All these systems will be due for replacement during the 2003 to 2006 timeframe. With affordability a key concern, the Department has initiated an intensive architecture study to determine the best mix of military and civil capabilities, including commercial alternatives, to support military satellite communications needs for the next century.

GLOBAL POSITIONING SYSTEM

GPS has become an invaluable asset to international civil and commercial users who are designing systems and developing plans which incorporate GPS. DoD continues to work closely with civil agencies to enhance the GPS contribution to U.S. and allied civil and commercial users, while guarding against a breach to U.S. national security. Study and limited testing devoted to GPS protection and denial to enemies on the battlefield continue. These efforts are key to continuity of GPS operations in hostile environments. The Department has proposed to Congress a plan for effective maintenance of GPS services and acquisition of the next block (Block IIF) of GPS satellites to sustain the constellation beyond the year 2000.

METEOROLOGICAL SATELLITE CONVERGENCE

The President's decision to converge U.S. polar-orbiting operational environmental satellite systems will merge the follow-on programs for the Defense Meteorological Satellite Program (DMSP) and the NOAA Polar-orbiting Operational Environmental Satellite (POES) Program and capitalize on NASA's Earth Observing System technologies. An Integrated Program Office (IPO) led by NOAA, 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 program is evaluating the requirements for a three-satellite constellation. The preferred architectural option includes a European satellite as one of the three satellites, provided this satellite meets specified U.S. conditions and includes 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 that 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. Additional savings will be realized through a consolidation of DoD and NOAA ground stations which support the environmental satellites. DoD is working closely with NOAA and NASA to ensure NPOESS satisfies national security requirements.

CONCLUSION

Space forces are essential for the successful execution of the National Security Strategy and National Military Strategy. Military space systems provide force multipliers that complement and enhance the capabilities of U.S. operational forces. The operational and modernization initiatives planned for the coming years will ensure DoD space forces will retain the capability and versatility to accomplish their missions effectively and efficiently in support of U.S. national security objectives.

Chapter 24

STRATEGIC NUCLEAR FORCES

INTRODUCTION

Although emphasis has shifted in the post-Cold War period from global, possibly nuclear, war to regional conflicts, strategic nuclear deterrence remains a key U.S. military priority. The mission of U.S. strategic nuclear forces is to deter attacks on the United States or its allies and to convince potential adversaries that seeking a nuclear advantage would be futile. 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 foreign nations. The two basic requirements that guide U.S. planning for strategic nuclear forces therefore are: the need to provide an effective deterrent while conforming to treaty-imposed arms limitations, and the need to be able to reconstitute adequate additional forces in a timely manner if conditions require.

The threat of a massive nuclear attack on the United States is much lower than it was during the Cold War. Still, about 25,000 nuclear weapons remain in Russia and on the territories of two other former Soviet republics. Even under the START II treaty, which has yet to be ratified by the Russian government, Russia will retain a sizable nuclear arsenal. In addition, the future political situation in Russia remains volatile and uncertain; a return to authoritarian rule or to a foreign policy hostile to the United States are both possibilities. Moreover, China is growing militarily and economically and has the potential to make major increases in the size and capability of its strategic nuclear arsenal during the next decade. Finally, the risk of nuclear proliferation is higher than in the past. Several countries are attempting to acquire technology for building nuclear weapons, nuclear-capable missiles, or both. In fact, there have been several unsuccessful attempts to smuggle nuclear materials from the former Soviet Union. Therefore, the risk exists that one or more potentially hostile countries could, over the next decade, acquire a limited capability for the long-range delivery of nuclear weapons.

FORCE STRUCTURE AND CAPABILITIES

Assuming START II is implemented by the year 2003, the planned U.S. strategic nuclear arsenal would include the following:

- 500 Minuteman III intercontinental ballistic missiles (ICBMs), each carrying a single warhead.
- 14 Ohio-class submarines, each armed with 24 Trident II (D-5) submarine-launched ballistic missiles (SLBMs) with multiple warheads.
- 66 B-52 bombers equipped to carry a combined total of no more than 1,000 AGM-86B air-launched cruise missiles (ALCMs) and AGM-129 advanced cruise missiles (ACMs).
- · 20 B-2 bombers carrying up to 16 gravity bombs each.

By the year 2003, the entire force of B-1 bombers is expected to be dedicated exclusively to conventional missions. While these aircraft would thus not be available for nuclear missions on

short notice, they could be returned to a nuclear role, given sufficient time and a requirement to do so. The B-2 and B-52 forces, by contrast, will continue to be assigned both nuclear and conventional missions.

There has been a major reduction in the U.S. strategic nuclear arsenal in recent years, and this downward trend is expected to continue for several more years. Table IV-18 compares actual or projected U.S. nuclear forces in FY 1989, FY 1996, and FY 2003. All force levels are for the end of the fiscal years in question, and the numbers for FY 2003 are based on the assumption START II will be implemented by that time. The table focuses exclusively on strategic nuclear weapons. The United States also had a sizable arsenal of tactical nuclear weapons in FY 1989; most of those weapons have since been withdrawn from deployment, and many are being eliminated.

Land-Based Intercontinental Ballistic Missiles

The U.S. land-based ICBM force consists of 530 Minuteman III ICBMs capable of carrying three warheads apiece and 50 Peacekeeper missiles, each deploying 10 warheads. As part of the ongoing drawdown, the Minuteman III force will be reduced to 500 missiles by the end of FY 1998. Assuming START II enters into force, the United States will modify these missiles to carry only one warhead each and will eliminate the Peacekeeper system by the year 2003.

The Defense Department is preserving the option to transfer Mark 21 warheads from the Peacekeeper to the Minuteman system. The Mark 21 was identified as the safest U.S. nuclear warhead by the Drell Commission, established by Congress to investigate potential hazards associated with handling, transporting, and deploying U.S. nuclear warheads. Mark 21 warheads contain several safety-enhancing features 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.

Table IV-18

Reductions in U.S. Strategic Forces, FY 1989 Through FY 2003

	FY 1989	FY 1996	FY 2003 [a]
ICBMs	1,000	580	500
ICBM Warheads	2,450	2,090	500
SLBMs	576	384	336
SLBM Warheads	4,992	Over 3,000	Approx. 1,750
Ballistic-MissileSubmarines	32	17 [b]	14
Heavy Bombers (PMAI/TAI)	324/359	101/173	130/181[c]

NOTE: PMAI = Primary Mission Aircraft Inventory TAI = Total Aircraft Inventory

[a] Assumes START II entry into force.
[b] Includes one SSBN that will not be fully operational until mid-1997.
[c] Includes 95 B-1s (TAI) that will be devoted entirely to conventional missions.

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 in many years, 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. The Department is exploring new ways to preserve key industrial technologies; reentry vehicle and guidance technologies are particularly problematic, given the lack of commercial applications. The FY 1997 budget provides funding to preserve a core of reentry vehicle expertise and the capability to manufacture specialized materials. There is a similar effort in the area of guidance system technology; the support provided will assist the United States in maintaining 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 nuclear warheads the United States will be permitted to deploy. SSBNs, which are very hard to detect when at sea, are the most survivable element of the strategic nuclear triad. A significant portion of the SSBN fleet is at sea at any given time, and all submarines not in the shipyard for long-term maintenance can be deployed during a crisis.

The U.S. SSBN fleet currently consists of 16 Ohio-class submarines. Two additional Ohio-class SSBNs, now under construction, will be commissioned in 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 currently under development.

The Trident II (D-5) missile, offers improved range, payload, and accuracy over the Trident I (C-4) and all previous SLBMs. This advanced weapon allows the SSBN force to hold at risk, with increased survivability, almost the entire spectrum of strategic targets of any adversary. The first eight Ohio-class submarines carry the C-4 missile; the final 10 have been or will be equipped, at the time of construction, with the newer D-5. The FY 1997 budget provides for continued procurement of D-5 missiles to support a 14-submarine D-5 SSBN force. Four of the eight submarines currently equipped with the C-4 missile will be retrofitted with the D-5 during regularly scheduled ship maintenance periods. Under current plans, following START II's entry into force, the other four SSBNs will either be converted into special-purpose submarines or be retired. This will leave a total force of 14 ballistic-missile submarines, all armed with D-5s. The D-5 missiles, while capable of carrying eight warheads, will be downloaded consistent with START II limits. A recent study, done at Congress's request, affirmed that converting to an all-D-5 SSBN force will provide operational and economic advantages over maintaining a force in which some SSBNs are equipped with the older C-4 missile. The Ohio-class submarine force will form the bulk of the U.S. nuclear deterrent for the indefinite future. The defense budget therefore continues to invest, albeit at a reduced rate, in measures to enhance SSBN security and survivability.

Long-Range Bombers

At the end of 1995, the U.S. long-range bomber force included 95 B-1s (48 PMAI), 94 B-52s (62 PMAI), and eight B-2s (six PMAI). Under current plans, the Air Force will receive its twentieth, and last, operational B-2 in FY 2000.

In the past, the bomber force was oriented primarily toward nuclear missions. However, given the growing emphasis on conventional warfare and the fact that all nuclear weapons acquisition and integration programs associated with the START II bomber force are now complete, current modernization efforts are aimed primarily at improving conventional bombing capabilities. Programs in this area will be guided by the recently completed Heavy Bomber Force Study and the ongoing Deep Attack/Weapons Mix Study, both of which are discussed in the Aviation Forces chapter of this report.

All three types of bombers currently in the force can deliver either nuclear or conventional weapons. Under START II, B-1 bombers will no longer be counted as nuclear weapon carriers once the United States notifies Russia that these aircraft have been reoriented to an exclusively conventional role. By contrast, B-52s and B-2s will retain nuclear capabilities. For example, a B-2 can carry up to 16 gravity bombs and a B-52 can carry up to 20 long-range cruise missiles for nuclear missions. Under the terms of the START II agreement, conventional bombers must be based separately from bombers with nuclear roles, and they may not participate in exercises or training for nuclear missions.

Finally, reductions have been made in the inventory of nuclear weapons for bombers, and weapons development programs have been terminated. Short-range attack missiles (SRAM-As), whose warheads lacked many of the desirable safety features of newer warheads, have been retired. The SRAM-II, a proposed replacement for the SRAM-A, was canceled several years ago. Procurement of the AGM-129 advanced cruise missile was halted at 460 missiles in lieu of the originally planned 1,460. Moreover, some AGM-86B ALCMs have been converted to conventional air-launched cruise missiles (and redesignated AGM-86Cs), and some gravity bombs and ALCMs have been retired or placed in dormant storage. Some additional AGM-86Bs will be converted to AGM-86Cs in 1996 and 1997.

READINESS AND SUSTAINABILITY

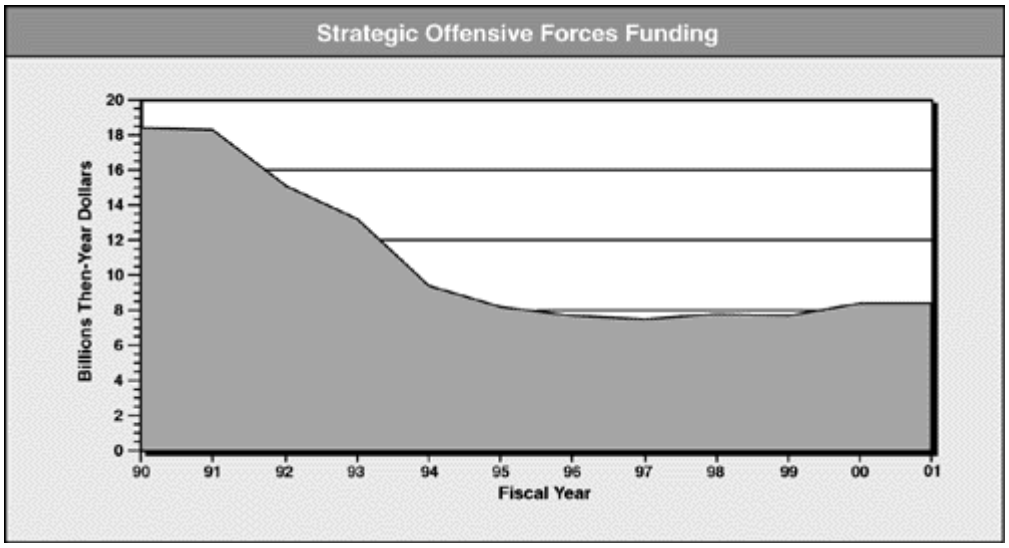
Plans to ensure that the Minuteman III system can be maintained at least to the year 2010 are well under way. The Rockwell International Corporation was selected in 1993 to replace aging and potentially unreliable components in the Minuteman guidance system. Installation of new guidance subsystems is scheduled to begin in FY 1998. 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 refurbishments after having been deployed for more than 25 years. The motors for the second and third stages of the rockets, which have only about a 17-year service life, will be replaced with a refurbished second stage and a remanufactured third stage. Installation of these motors will begin in FY 2001.

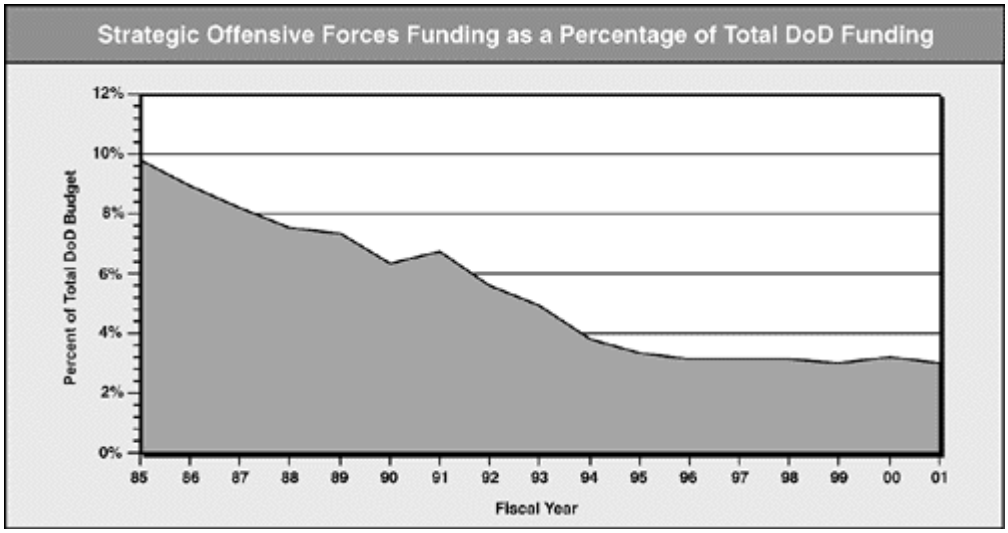
Reflecting the relaxation in Cold War tensions, the bomber force is no longer maintained on constant alert. This change in policy reduces stress on the aircraft and crews and allows a greater emphasis on conventional training. Although U.S. bombers are no longer kept on 24-hour alert, they could be returned to that status within a few days if circumstances warranted.

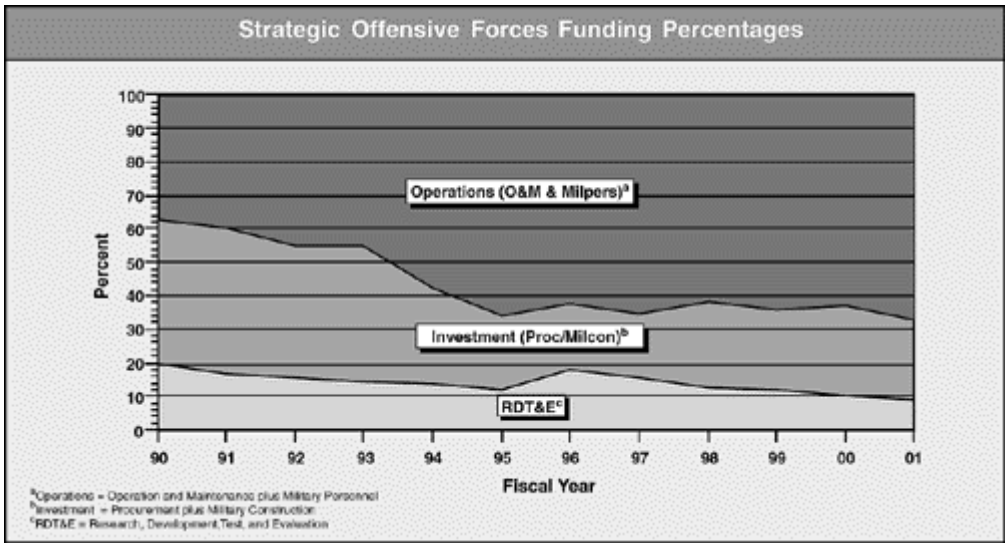
Whereas the bomber force is now on a much lower state of alert than it was during the Cold War, there has been no significant change in the alert status of U.S. ICBMs or SSBNs. For example, the United States still maintains two full crews for each SSBN, and about two-thirds of all operational SSBNs are at sea at any given time. (On average, about 10 percent of the submarines in the SSBN force are undergoing long-term overhauls at any point in time, and thus are not immediately available for deployment.) U.S. ICBMs are still maintained on continuous alert, but no ICBMs or SLBMs are aimed at 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, while 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 -- has fallen and is now at its lowest level in more than 30 years. As the following charts show, this is true in terms of both total expenditures and the fraction of the total defense budget that is devoted to nuclear forces. Moreover, one major nuclear system -- the B-1 bomber -- is in the early stages of its transition to a conventional role.







Modernization programs for strategic forces were either completed or severely curtailed during the past few years. The only major acquisition efforts that remain are modifications of B-2 bombers to the Block 30 standard, B-1 conventional mission upgrades, Trident II (D-5) missile procurement, and Minuteman III life extensions. Moreover, two of these programs are designed to enhance performance in conventional, as opposed to strategic nuclear, roles. As the chart at the bottom of the preceding page shows, expenditures to sustain the readiness of U.S. nuclear forces now account for most strategic nuclear funding, having increased from about 40 percent of the total in FY 1991 to about 62 percent today. As the force structure stabilizes and modernization programs are concluded, operations expenditures 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 these forces are being reduced in the aftermath of the Cold War, and the percentage of the defense budget devoted to them is declining, strategic forces will continue to provide a strong and credible deterrent to nuclear attack. Moreover, the United States will protect options to maintain its strategic capabilities at START I levels until the START II treaty has entered into force.

Chapter 25

BALLISTIC MISSILE DEFENSES

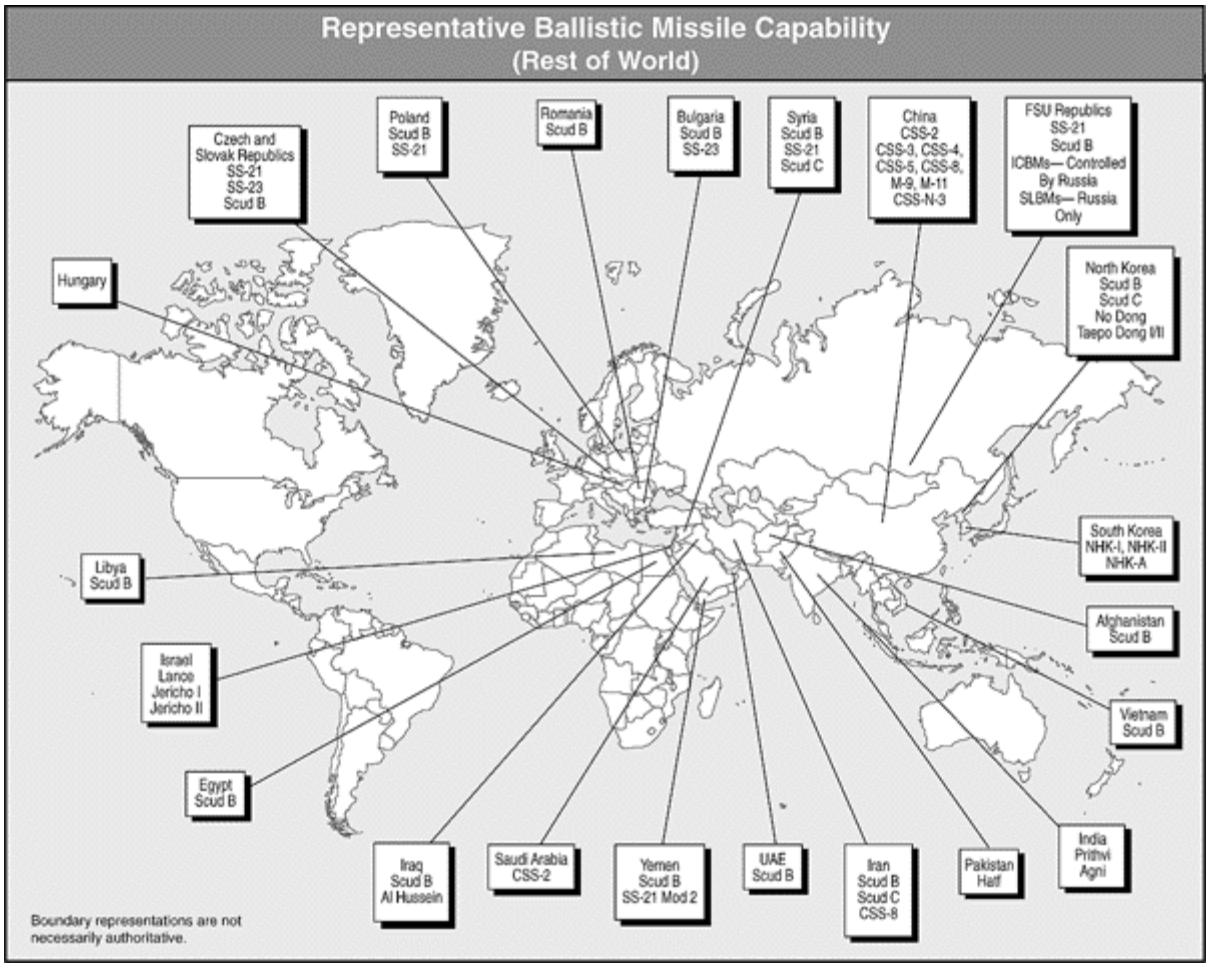
INTRODUCTION

The proliferation of weapons of mass destruction (WMD) and the ballistic missiles that deliver them pose a major threat to the security of the United States, its allies, and friendly nations. While the end of the Cold War greatly reduced the threat of a global conflict or large-scale attack on the United States, the proliferation of WMD and ballistic missiles that can deliver them raise new threats to U.S. security interests. Over 20 countries possess or are developing nuclear, biological, or chemical (NBC) weapons, and more than 20 nations have theater ballistic missiles (TBMs) -- see chart on the following page. A robust Ballistic Missile Defense (BMD) program plays a critical role in the broader counterproliferation strategy to reduce, deter, and defend against WMD and ballistic missile threats.

The Intelligence Community has estimated that a threat to the United States from ballistic missile attack is not likely to emerge for at least another decade, but the threat to U.S. troops in the field and to allies and friends has already arrived. U.S. missile defense priorities reflect the urgency of this immediate threat and the shifting focus from global conflict to the threat of major regional conflicts involving adversaries armed with advanced conventional weapons and weapons of mass destruction. The U.S. ballistic missile defense program has placed highest priority on Theater Missile Defense (TMD) programs to meet the threat that is here now. The second priority has been development of a National Missile Defense (NMD) program that positions the United States to field the most effective defense system possible at a time in the future when the threat warrants deployment. Third priority has been continued development of a technology base that improves the capability of both TMD and NMD systems to respond to emerging threats.

REVIEW OF BALLISTIC MISSILE DEFENSE PROGRAMS

From August 1995 through February 1996, the Department of Defense conducted a comprehensive review of the Department's BMD program. The goal of the review was to ensure the Department fields the most effective missile defense at an affordable price in time to beat emerging ballistic missile threats. The BMD program was reviewed in light of assessments of existing and potential threats; status of each BMD program or element; changes in force projection needs since the 1993 Bottom-Up Review (BUR); congressional actions and FY 1996 budget actions; Joint Chiefs of Staff spending and modernization priorities; and treaty obligations. The results of the review did not alter the prioritization of BMD programs (theater missile defense, national missile defense, and technology base), but did call for some significant changes within each program area.



The program review results focused on how to meet the here-and-now threat of theater ballistic missiles and cruise missiles against U.S. forward-deployed troops and bases. As a top priority within Theater Missile Defense, the review recommended building on existing infrastructure and prior investment in order to deploy lower-tier missile defense systems as soon as possible to defend small areas or critical assets. This will strengthen, in the shortest time possible, the ability of the United States to defend against immediate threats from short- and medium-range theater ballistic and cruise missiles. Upper-tier missile defense programs provide population and wide-area defense, can better deal with longer-range theater ballistic missiles and weapons of mass destruction, and reduce the number of missiles that lower-tier systems must engage, thereby increasing overall TMD effectiveness. These systems will also be restructured by continuing development of land-based upper-tier systems, but at a slower rate and at lower overall program cost, and by accelerating efforts to develop sea-based upper-tier systems. The review also shifts the National Missile Defense program from a technology to a deployment readiness program. This positions the Department to respond more quickly to new strategic threats to the United States, should they emerge. Based on the review, the Department plans to spend about $14 billion for ballistic missile defenses over the Future Years Defense Program (FYDP).

ROLE OF BALLISTIC MISSILE DEFENSE IN U.S. DEFENSE STRATEGY

Ballistic Missile Defense is a critical component of the broad U.S. strategy to meet ballistic missile threats to U.S. forces and allies in a theater and to the United States. BMD plays a role in each of the three components of that strategy: preventing and reducing the threat, deterring the threat, and defending

against the threat. Prevention and deterrence are supported by a strong nuclear deterrent, arms control agreements such as the Strategic Arms Reduction Treaty (START) and the Nuclear Non-Proliferation Treaty (NPT), threat reduction efforts such as Cooperative Threat Reduction (CTR), the Missile Technology and Control Regime (MTCR) and export controls, and counterproliferation military capabilities. Missile defense programs complement and strengthen the prevention and deterrence provided by these programs. Effective missile defense systems reduce the incentives for proliferants to develop, acquire, or use ballistic missiles and WMD by reducing the chances that an attack would inflict serious damage on U.S. or allied targets. Missile defenses thus both deny the accomplishment of a belligerent's objective and decrease the incentive to acquire WMD and ballistic missile systems. Furthermore, the ability to extend protection to allies and friends can mitigate the desire of many states to acquire their own WMD as an independent deterrent against attack.

The threat of ballistic missile use in regional conflicts has grown substantially, and the potential combination of WMD with theater ballistic missiles poses serious dangers and complications to the management of regional crises and the prosecution of U.S. strategy for major regional conflicts. Ballistic missiles have been used in six regional conflicts since 1980. The 1980-88 Iran-Iraq War, Libyan attacks on Lampedusa Island, Operation Desert Storm, the war in Afghanistan, the Iranian attack against dissident camps, and the recent conflict in Yemen demonstrated the capability of ballistic missiles to threaten a full range of targets for political and military purposes.

In the future, an aggressor state may seek to limit U.S. freedom of action by threatening NBC-armed missile attack. Such a threat 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, undermine conventional superiority, and jeopardize the credibility of U.S. regional security strategy. By dealing effectively with these threats, ballistic missile defense can contribute to both prevention and successful U.S. responses to regional crises.

FORCE STRUCTURE AND CAPABILITIES

Theater Missile Defense Programs

The Department's first BMD 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 its friends and allies, from TBMs. This plan envisions the time-phased acquisition of a multitier defensive capability.

The TMD program that emerged from the 1993 Bottom-Up Review consisted of three core programs: Patriot Advanced Capability (PAC)-3, Theater High Altitude Area Defense (THAAD), and Navy Area Defense (NAD); and three potential advanced capability programs: Navy Theater Wide (NTW), Corps Surface-to-Air-Missile, or Medium Extended Air Defense System (MEADS), and Ascent/Boost-Phase Intercept (BPI). The advanced capability programs were to be developed as funding permitted beginning in FY 1998.

As a result of the just-completed program review, the Department has made significant adjustments in the TMD program.

- Lower-tier systems remain a top priority. The Department will field a capability to defeat short-to-medium range TBMs as soon as possible. Building on existing infrastructure and prior investment, BMD funds will be shifted to both PAC-3 (about $300 million more in FYDP) and NAD (about $150 million more in FYDP). BMD funds will also be shifted to MEADS ($85 million more in FYDP) to begin exploration and validation of a concept for this system with France, Germany, and Italy. MEADS will be a highly mobile system to be deployed with maneuver forces and provide 360-degree coverage against TBMs, cruise missiles, and other air-breathing threats. Six of nine Army Patriot battalions will be upgraded to the PAC-3 configuration. The upgrade of the remaining three will be deferred pending a decision on the future role of MEADS in Army battlefield air defenses.
- Upper-tier systems are necessary to defend-wide areas, to increase effectiveness against weapons of mass destruction, and to defeat longer-range ballistic missiles. THAAD's early deployment -- the so-called User Operational Evaluation System (UOES) -- is unchanged; it will be available to U.S. forces for contingency use in 1998, with a battery of several launchers each with eight missiles and two radars. The production THAAD system will be an upgrade to the UOES model and will focus on the near-term and mid-term threat. Restructuring of the THAAD production systems will save about $2 billion through the FYDP; these funds will be available for other Department priorities. As a result of the program review, funds will be shifted ($600 million in the FYDP) to NTW, otherwise known as Navy Upper-Tier, to move it from the status of advanced capability exploration to system assessment and demonstration.
- Other TMD Concepts. The Department will continue to explore concepts for boost-phase theater missile defense, both within Ballistic Missile Defense Organization and Air Force programs.

The revised program resulting from the review reflects a commitment to deploy, as soon as possible, TMD systems that defend against a threat that has already emerged. With these changes, the Department has increased the number of TMD systems moving toward early deployment.

TMD Cooperation with Allies and Friends

As part of broader efforts to enhance the security of U.S. and allied forces against ballistic missile strikes and to complement U.S. counterproliferation strategy, the United States is exploring opportunities for cooperation with its allies and friends in the area of TMD.

Recognition of the existence and growing threat of ballistic missile attack is increasing in the international community. The latest stage of TMD cooperation results from DoD giving high priority to a renewal of the spirit of armaments cooperation, thereby providing impetus to efforts to engage allies and friends in ballistic missile defense programs. The United States has established several working groups with allies to explore the possibility of cooperation in the area of TMD and regularly scheduled talks occur. 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 can range from bilateral or multilateral research and development, to improvements to current missile capabilities, to off-the-shelf purchases, to more robust participation such as co-development and co-production programs. Additionally, the United States is examining arrangements that would provide TBM early warning information to a number of allies.

MEADS is a practical, concrete step in achieving a TMD capability cooperatively. On February 20, 1995, transatlantic cooperation on TMD took a significant step forward with the signing of a Statement of Intent for joint development and production of the MEADS. This new program will be a joint venture by the United States, France, Germany, and Italy.

In the United States' view, cooperation in theater ballistic missile defense will help strengthen U.S. security relationships with allies, will enhance the U.S. counterproliferation strategy of discouraging acquisition and use of ballistic missiles and, should that fail, will protect against such threats.

National Missile Defense Program

The second priority of the ballistic missile defense program is National Missile Defense. The objective of the NMD program is to position the United States to respond should new strategic missile threats to U.S. territory emerge. As a result of the review, the Department is shifting emphasis from technology readiness to deployment readiness, though it is not making a decision now to deploy an NMD system.

Indeed, the Intelligence Community has concluded that no country, other than the major declared nuclear powers, will develop or otherwise acquire a ballistic missile in the next 15 years that could threaten the contiguous 48 states; only a North Korean missile in development, the Taepo Dong 2, could conceivably have sufficient range to strike portions of Alaska or the far-western Hawaiian Islands, but the likelihood of it being operational within five years is very low.

The threat from an accidental or unauthorized launch from the former Soviet Union or China is remote. The number of former Soviet Union strategic ballistic missiles, the number of bases and submarines where they are located, and the number of countries where they are based are being reduced by START and the CTR program. These dramatic reductions in the strategic missile threat to the United States also reduce the opportunities for accidental or unauthorized launch. In addition, a ballistic missile detargeted according to the 1994 Clinton-Yeltsin agreement either could not be launched accidentally or, if launched, would land in the ocean.

The NMD program is thus structured to create a foundation upon which the United States could draw if intelligence indicated that a strategic threat was emerging, in order to put a defense against that threat into the field before it emerged. The United States is not making a decision to deploy a national missile defense; deploying before the threat emerges means not deploying the most advanced technology when the threat does emerge.

Congress has provided $375 million more for NMD than the Administration requested in FY 1996. The Department will apply this $375 million during FY 1996 and FY 1997 to enhance the technological foundation for the NMD program, with two objectives: (1) to improve the performance of the national missile defense to be deployed if a threat warranting deployment emerges; and (2) to improve the timelines of response to an emerging threat -- specifically, to achieve within three years, and to preserve thereafter, the capability to deploy a limited defense of all 50 states within three years of a decision to do so.

The NMD Deployment Readiness Program

For the next three years, the NMD program will develop all the elements of a system in a balanced manner, achieving a first test of an integrated system by FY 1999. At the end of these three years, i.e., before 2000, the United States will be in a position to deploy an initial system, based on the elements tested in an integrated manner in FY 1999, within three years of a decision to do so. Thereafter, the NMD program will work to improve the performance of the system by advancing the technology of each element and adding new elements, all the while maintaining the capability to deploy the system within three years of a decision.

The elements of the baseline NMD system would be based on the existing early warning satellite system and its planned follow-on, Space-Based Infrared System (SBIRS) Geosynchronous; Upgraded Early Warning Radars; a new Ground-Based Radar (GBR); the Ground-Based Interceptor (GBI); a Battle Management/ Command, Control, and Communications (BM/C3) system); and an In-Flight Integrated Communications System. Other elements, including other fixed radars and the Space and Missile Tracking System (or SBIRS Low Earth Orbit), part of the SBIRS program, could be part of follow-on NMD architectures.

The NMD Deployment Readiness Program will be conducted in compliance with the Anti-Ballistic Missile (ABM) Treaty. Depending on its configuration, a deployed NMD system could either be compliant with the ABM Treaty as written, or might require amendment of the Treaty's provisions. The NMD system would have the purpose of defending against rogue and accidental/unauthorized threats. It would not be capable of defending against a heavy deliberate attack. Decisions about the treaty compliance of potential NMD systems would be made by the Department of Defense (on advice of the Compliance Review Group). The current program is proceeding, however, in the expectation that a deployment of 100 GBI and one GBR at Grand Forks, North Dakota, would be treaty compliant.

Technology Base

Activities in the BMD technology base are key to countering future, more difficult threats. The technology base program underpins both the TMD and NMD programs. It will allow DoD to provide block upgrades to baseline systems; to perform technology demonstrations to reduce risk and speed technology insertion; and to advance basic technologies to provide a hedge against future surprises.

The Department is continuing technology projects underway today, such as the exploration of unmanned aerial vehicle and airborne BPI concepts at about $10 million per year, and the space based laser program at about $30 million per year. There are other programs that will be funded outside of the Ballistic Missile Defense Organization program, such as the Air Force airborne laser system.

Cruise Missile Defense

Most TMD sensors, BM/C3, and weapons also have some capability against cruise missiles (including the PAC-3, Navy Area TBM defense, and MEADS lower-tier systems). The Department has a number of initiatives outside of the BMD program to improve U.S. ability to detect and defeat threat cruise missiles in-theater or launched against the United States The NMD BM/C3 architecture will be designed to promote interoperability and evolution to a common BM/C3 system for ballistic and cruise missile defense.

CONCLUSION

The Administration is committed to protecting against the proliferation of weapons of mass destruction and the ballistic missiles that deliver them. The United States has a multifaceted strategy for countering such threats, of which BMD is a critical ingredient. The overall structure of the BMD program proposed: (1) meets present and possible future ballistic missile threats, (2) will provide the best technology to meet these threats, (3) is fiscally prudent, and (4) is consistent with efforts to reduce and prevent missile threats.

Chapter 26

NATIONAL GUARD AND RESERVE

INTRODUCTION

In August 1970, Secretary of Defense Melvin R. Laird directed the military departments to apply a Total Force concept to all aspects of planning, programming, manning, equipping, and employing National Guard and Reserve forces. Then as now, the U.S. armed forces were restructuring to meet the threat of a dynamic security environment while dealing with the economic realities of decreasing defense budgets. Secretary Laird reached the inescapable conclusion that increased reliance on the National Guard and Reserve forces was a prerequisite to a cost-effective force structure.

In 1973, the Department of Defense adopted the concept as the Total Force policy, which recognized that all of America's military -- Active, Guard, and Reserve -- should be readily available to provide for the common defense. Each succeeding Administration has emphasized this approach. The nation has benefited from the lower peacetime sustaining costs of Reserve forces, compared to similar active units, that result in a more capable force structure for a smaller defense budget. Today, after 25 years, the Total Force concept and the subsequent Total Force policy have proven to be a clear and continuing success.

Yesterday

Prior to 1970, the Ready Reserve Force were neither forces ready nor forces in being. The Army National Guard and Army Reserve were World War II/Korean War vintage units well out of the mainstream Army. They experienced serious shortages of modern equipment, including radios, aircraft, trucks, and ground surveillance equipment. There was also a backlog of 133,000 enlistees (12 percent of the force) awaiting initial active duty for training. The Naval Reserve's 80-ship fleet was in a poor state of readiness resulting from inadequate funding of ship maintenance. The ships' ordnance and electronic training equipment were of World War II vintage. The Marine Corps Reserve's 4th Aircraft Wing had no electronic warfare or in-flight refueling capability, and no rotary wing aircraft. The Air National Guard still operated 359 Korean War era F-84 fighters, and the Air Force Reserve operated 332 Korean War vintage C-119 cargo airplanes.

In the early 1970s, individual and professional qualifications were far below those of the active components (AC). Personnel policy allowed unlimited accessions of individuals with lower mental category test scores and of non-high school graduates. Only a high school diploma was required for commissioning as a Second Lieutenant or promotion to any officer rank in the Army; Reservists could complete the Officer Basic Course through correspondence courses. The composition of the reserve component (RC) did not reflect the racial and gender makeup of the general population. During that period, African-American membership in the Reserves was less than 2 percent of the force. Some states did not have any African-American representation in the National Guard. Total minority membership was less than 4 percent; women made up less than one-half of one percent of the force.

Today

With increased reliance on citizen-soldiers, the National Guard and Reserves serve to link the civilian community and the military as partners in national defense. The Reserves are now much more capable of supporting the National Security Strategy. Army National Guard and Army Reserve units operate front-

line, state-of-the-art equipment, and provide large numbers of key combat, combat support, and combat service support forces. The Air National Guard and Air Force Reserve provide fighters, bombers, transports, aerial refueling aircraft, and other resources to the active Air Force in both wartime and peacetime. The Naval Reserve is equipped and trained to augment and sustain the active Navy with 34 aircraft squadrons and 21 ships, including one operational aircraft carrier. The Marine Corps Reserve provides combat, combat support, and combat service support units to augment and reinforce Marine Expeditionary Forces. Coast Guard Reserve members are assigned directly to active component units for training and operational missions.

The Reserves have successfully expanded the recruiting base to tap more diverse segments of American society. African-Americans now account for over 16 percent of the force. Total minority membership is approximately 23 percent, while women represent approximately 14 percent of Reserve personnel.

In 1995, the professional qualifications of National Guard and Reserves personnel are comparable to those of their active duty counterparts. Individuals from the lower mental test score categories and non-high school graduates are all but precluded from enlistment in the Guard and Reserve. The Officer Basic Course must be attended in residence, and completion of specific professional military education courses is required for promotion to all noncommissioned officer and higher commissioned ranks. Senior Service College courses are required for promotion to general or flag rank.

Today, Selected Reserve units and individuals are prepared to deploy anywhere on the globe and rapidly integrate with active force operations, as they did during Operations Desert Shield and Desert Storm. Today the Guard and Reserve provide approximately 38 percent of the armed forces' end strength, while costing only 8 percent of DoD's budget. The Guard and Reserves are an excellent value. They have evolved into an efficient and effective national security resource at an attractive, low cost.

Tomorrow

The Reserve Forces will continue to be a strong partner, performing key missions within the Total Force. By being accessible and mission-ready, they will enable DoD to reduce the risk associated with a smaller active force. The National Military Strategy will continue the requirement for highly trained and equipped combatready reserve forces to ensure the nation's ability to fight and win. As resources continue to decline and the tempo of day-to-day military operations remain high, reserve forces will continue to be a significant force multiplier. Based on the findings of the Commission on Roles and Missions, a DoD-wide review of how to better integrate the Reserve components into the Total Force is currently under way. The results of this review will be presented to the Roles and Missions Senior Advisory Group in the spring of 1996.

A MISSION-READY FORCE

The Department's goal is to ensure reserve component units are manned, trained, and equipped to support the National Security Strategy, including the ability to respond to the two nearly-simultaneous major regional conflicts (MRCs). To accomplish this, the National Guard and Reserve must be trained and equipped with modern, compatible equipment to perform assigned missions with their active duty counterparts and coalition partners. DoD has made great strides over the past 25 years, but compatibility issues and shortfalls of essential support equipment remain. DoD's strategy to improve personnel readiness involves sound analysis and maximizing training opportunities. DoD's equipment strategy entails capitalizing on equipment redistribution, modifications, and smart business practices, using new procurement only when necessary.

Traditionally, the National Guard and Reserve units and personnel maintained readiness via training exercises, with the performance of real world operational missions the occasional by-product. In recent years, a critical paradigm shift has occurred. Today, reserve forces perform peacetime operational missions worldwide, with training as the by-product. This fulfills a double need -- relieving the stress of active operational and personnel tempo while maintaining RC readiness.

Force Support Package

The Force Support Packages (FSP) are the Army's grouping of corps and theater level combat support and combat service support units organized to support the Major Contingency Response Force and the Rapid Regional Support Force in worldwide contingencies. The Total Force package of early deploying, high priority units is a good example of active and reserve force integration. There are currently 1,183 units in the FSP, 46 percent from the RC. Army planners group the FSP into two packages prioritized by anticipated sequence of need. These support packages enjoy priority for resourcing, following the principle of first-to-fight being the first resourced.

Enhanced Brigades

To provide a strategic hedge, the October 1993 Bottom-Up Review recommended reorganizing the Army National Guard to include 15 enhanced readiness brigades. The Army Guard's enhanced brigades replaced former round-out brigades and are now the nation's principal reserve ground combat maneuver force. They consist of seven infantry brigades, five mechanized infantry brigades, two armor brigades, and one armored cavalry regiment. By FY 1999, the Army plans to complete a series of initiatives that will result in brigades that are organized, equipped, and trained for deployment, command and control compatible, and logistically supportable by any Army corps or division. The Army has resourced National Guard enhanced brigades to achieve premobilization proficiency sufficient to meet full readiness requirements within 90 days of mobilization. Enhancements already developed or in progress include:

- Resident teams of active component soldiers who provide advice, assistance, and planning support.
- Training association with an active component division.
- Authorized overstructure to improve personnel readiness.
- Priority for training resources, such as school seats and additional Active Duty for Training dollars.
- Increased training opportunities, such as rigorous staff training exercises and demanding force-on-force field training.
- Support from Regional Training Brigades, active component organizations created exclusively to plan and execute RC weekend and annual training.
- Full funding of operating tempo (OPTEMPO) requirements.

Title XI Initiatives

The 19 provisions of Title XI of the FY 1993 National Defense Authorization Act (also called the Army National Guard Combat Readiness Reform Act of 1992) are in the third year of implementation. Many of the programs described above for the enhanced readiness brigades and Force Support Package units respond directly to Title XI requirements. From the beginning, the Army has also applied Title XI requirements to early deploying units of the Army Reserve. Now, the FY 1996 National Defense Authorization Act amends Title XI to include early deploying units in most provisions. Thus, all Force Support Package RC units receive priority for readiness initiatives appropriate to their war plan timelines. The initiatives:

- Increase the percentage of prior active service members.
- Improve medical and dental readiness.
- Assign to AC associate units responsibilities for review of officer promotions, training programs, readiness reports, and annual validation of compatibility with active duty forces.
- Provide 5,000 AC soldiers as full time advisors/ trainers to reserve component units.
- Improve accuracy of the readiness reporting system.
- Increase compatibility between AC and RC personnel and logistics systems.

Collectively, these initiatives and programs directly support the improved readiness of Army National Guard and Army Reserve forces.

Equipment

During 1995, the Services allocated $1.3 billion to the reserve components for the procurement of new equipment and upgrades. Congress provided an additional $764 million in procurement funding for new equipment, such as C-130 aircraft, heavy tactical trucks, and aircraft system enhancements and modifications. However, the primary method for providing reserve forces with modern combat equipment is the redistribution of major weapons systems from active forces. The value of equipment redistributed to the Reserves last year was approximately $7.5 billion.

The reserve components continually strive to improve compatibility and interoperability with the active components in the tactical, logistical support, and communication areas. For example, Army Reserve and National Guard units possess tactical radios that include both older models and the latest frequency-hopping secure voice Single Channel Ground and Airborne Radio System (SINCGARS). Last year over 7,000 SINCGARS radio sets were fielded. Several hundred Army Reserve tactical wheeled vehicles, some over 25 years old, are in the process of being refurbished through the Extended Service Program, a cost-effective method of enhancing operational readiness. Marine Corps Reserve RH-53D helicopters are scheduled to be replaced with CH-53D/E helicopters, identical to active component models. The Naval Reserve continues to modernize with Coastal Minehunter (MHC) and Mine Countermeasures (MCM) ships. The Air Force is upgrading the Air Force Reserve and Air National Guard with digital communications equipment.

Facilities

The base realignment and closure (BRAC) process allows for all closing installations with major training sites to maintain training areas and minimum support facilities in a reserve enclave. Realignments, consolidations, and use of reserve enclaves at BRAC installations have improved RC facilities posture and allowed the RC to reduce the backlog of construction through FY 1995 by $2 billion. Use of BRAC facilities enabled RC units to move out of many leased facilities and into government owned property, substantially reducing costs while consolidating units and improving readiness.

In 1995, the Reserves moved forward with 188 projects in the military construction program. This provided facilities funding for Air National Guard and Air Force Reserve units converting to new weapon systems, while the Army National Guard and Army Reserve were provided new and upgraded maintenance shops and state-of-the-art training facilities. In 1996, the Guard and Reserves will design and start construction of 152 projects totaling $437 million in new maintenance, training, and operations facilities.

Training

Well organized and professionally conducted training is the cornerstone of personnel readiness. Reserve component training presents special challenges. When compared to their active duty counterparts, National Guard and Reserve members have limited time available to train. Training is difficult to support because members are widely dispersed. The RC is examining innovative technologies with potential to meet these challenges and to leverage scarce training resources.

Distance learning techniques have demonstrated this potential. Distance learning involves using available instructional technologies -- print, video tape, computer-based training, interactive video disk, and video teletraining -- to deliver training to a student's training location or home. This is one cost-effective way to overcome RC geographical dispersion and limited training time. When combined with current and emerging simulation technology, new and dramatic opportunities may occur. These include performing Virtual Brigade exercises, which involve unit headquarters located throughout the United States exercising electronically. DoD has established a Total Force Distance Learning Action Team to document distance learning requirements, establish standards, achieve interoperability, and develop an implementation strategy. The Government Alliance for Training and Education (GATE) was established in March 1995 as a spin-off of the Department's Distance Learning action team. GATE has over 20 federal agencies now working together to promote intergovernmental sharing of distance learning resources.

The use of simulation devices, particularly at the Reservist's home or reserve center training site on weeknights and weekends, has also demonstrated value. The Department supports the use of simulation training as a time-saving and cost-effective approach to enhance individual proficiency. DoD's long-range goal is to provide simulation devices that focus on the specific training needed and are inexpensive enough to field at every required training site. The Department's Advanced Research Projects Agency has made great strides in this area since 1990. Funding support for training simulators and related research and development has been critical to the progress in this area to date and will be needed to sustain future training readiness.

The Army's Reserve Component Automation System (RCAS) will provide automated support for the information and decision making needs of Army Guard and Reserve commanders, staffs, and functional managers by using commercial off-the-shelf hardware and software. RCAS will provide the data needed to plan and control mobilization and improve day-to-day administrative tasks. Ongoing funding and schedule problems with RCAS caused the Chief of the National Guard Bureau to restructure the program on a strict design-to-cost basis. This newly restructured program will leverage new information management technology, improve user support, and lower overall cost, while meeting critical information requirements of the Army Guard and Reserve.

AN ACCESSIBLE FORCE

Accessibility is the term which describes the degree to which Reservists are available to deploy when called-up -- voluntarily or involuntarily -- to fill the manpower needs of the Military Services. Accessibility has taken on increased importance in the Department in recent years because the Services have placed greater reliance on their RC for both wartime and peacetime requirements.

Mobilization Authorities

During the Cold War, the main mission of the reserve forces was to mobilize to help active forces fight and win a global war. Today Reservists routinely volunteer for a wide range of peacetime operations

around the world. Recent U.S. presidents have shown no reluctance to use their statutory authority to gain access to large numbers of Reservists when required for different purposes. Examples include Operation Desert Shield in August 1990, Operation Desert Storm in January 1991, and Operation Uphold Democracy in September 1994. The provisions available to mobilize large numbers of Reservists are:

- Authority for Full Mobilization -- provides access to all reserve forces upon declaration of war or national emergency by Congress.
- Authority for Partial Mobilization -- provides access of up to 1,000,000 Ready Reservists upon declaration of national emergency by the President.
- Authority for Presidential Selected Reserve Call-Up (PSRC) -- provides access to up to 200,000 members of the Selected Reserve with Presidential notification to Congress that the call-up is being made.

Reserve members and units may volunteer and be accessed under Title 10 U.S.C. The number of reserve volunteers available -- and how long they may remain on active duty -- depends on how many Reservists volunteer, funding available, and active force end-strength authorizations.

The Department's policy on use of the Reserves covers a wide spectrum. For MRCs and national emergencies, ordering RC units and individuals to active duty without their consent will be assumed. For lesser regional conflicts, domestic emergencies, and other missions, maximum consideration will be given to accessing volunteer reserve units and individuals before requesting Presidential authority for an involuntary order to active duty. The National Guard provides the primary response to state emergencies and natural disasters. Internationally, active forces initially respond to peace enforcement, peacekeeping, psychological operations, humanitarian assistance operations, and disaster relief overseas. Guard and Reserve units and individuals provide a readily accessible base to relieve active component operational tempo.

Enhanced Accessibility

By 1998, RC membership will be reduced almost 25 percent from a 1989 peak of nearly 1.2 million Selected Reservists. However, by 1998 the Reserve forces will have increased roles in national defense. The Department continues to explore ways to further enhance Reserve accessibility to perform a wide range of peacetime operations. New programs are being developed that will increase the use of the Guard and Reserve, using training time to meet peacetime operational requirements of the commanders in chiefs (CINCs) while achieving RC training objectives. Under a pilot program sponsored by the Secretary of Defense, the Joint Staff, the CINCs, and the Services, suitable operational peacetime projects are being identified that will meet the dual criteria to provide valuable training for the reserve forces and serve to decrease the increasingly burdensome OPTEMPO and personnel tempo (PERSTEMPO) of the active forces. One initiative already yielding positive results involves the Defense intelligence community's increased use of Reservists to provide joint support for peacetime operational intelligence requirements.

A NEEDED FORCE

During 1995, the National Guard and Reserve contributed to a variety of missions in the continental United States (CONUS) and worldwide, supporting Unified Commands, international peacekeeping organizations, humanitarian relief operations, and Operation Joint Endeavor. Examples of the Total Force in action include the following:

ARMY NATIONAL GUARD

At any time, as many as 20 percent of the units of the Total Army participating in overseas operational deployments are from the Guard and Reserve. In January 1995, more than 400 Army National Guard soldiers from 24 states deployed for a six-month rotation to the Sinai Desert as part of the Multinational Force and Observer (MFO) mission. Hundreds of National Guard medical personnel deployed to U.S. Southern Command and U.S. Atlantic Command, providing medical and dental care and patient education to local populations. Approximately 6,200 Guard soldiers supported humanitarian and civic activities, including construction/renovation of over 27 kilometers of road, 31 schools, and 37 medical clinics. National Guard organizations from 16 states have formed partnerships with the governments of 14 countries of Eastern Europe to link democratization efforts abroad with grassroots America. Army Guard soldiers from seven states comprised as much as two-thirds of the Special Forces in Haiti for Operation Uphold Democracy. The Army National Guard operated seven repair sites in the United States in 1995 to receive and repair vehicles and equipment under the Retrograde of Materiel from Europe (RETROEUR) program. They received over 9,000 vehicles and brought nearly 4,000 to required standards for issue. Almost 1,000 Army Guard soldiers are participating in Operation Joint Endeavor.

ARMY RESERVE

Army Reservists also participated in the MFO mission in the Sinai and supported other active Army operations in Egypt, Saudi Arabia, Kuwait, and Jordan. The Army Reserve joined with units of the Army National Guard to provide engineer, military police, medical/dental, maintenance, military intelligence, public affairs, and signal support to the U.S. Southern Command. Army Reserve ordnance, quartermaster, transportation, and Judge Advocate General units supported European Command, while Reserve engineers rebuilt and maintained major training areas. Army Reservists in Japan and Korea provided installation engineer, postal, fuel handling, and medical support personnel. Reservists were mobilized for Operation Uphold Democracy and continue to be mobilized to support other ongoing operations. The Army Reserve had 308 soldiers in Europe in 1995 to support the RETROEUR program. They prepared a portion of the 12,800 vehicles and other equipment identified to return to CONUS for repair and reissue. Over 2,100 Army Reserve soldiers are participating in Operation Joint Endeavor.

NAVAL RESERVE

A Navy Reserve Mobile Construction Battalion (Seabees) deployed to Guantanamo Bay, Cuba, in support of Haitian and Cuban refugee support operations. Aviation elements deployed on the USS Theodore Roosevelt in support of NATO/UN operations in Bosnia and Herzegovina, while a Reserve Helicopter Combat Support Squadron deployed HH-60 aircraft in less than 24 hours to conduct plane guard duty for the USS Abraham Lincoln. Reservists surveyed and redistributed $85 million worth of excess material in Europe to commands in Europe and CONUS. Ten of the 14 Naval Reserve Force ships greatly alleviated active operational tempo by deploying for four to six months to the Western Pacific, North Atlantic, Great Lakes, and South Atlantic. For 1995, the Naval Reserve Force contributed over 1.5 million workdays of peacetime contributory support to active components. The Naval Reserve is also participating in Operation Joint Endeavor.

MARINE CORPS RESERVE

During FY 1995, the Marine Corps Reserve participated in 14 major joint operations and training exercises, including Operation Joint Endeavor. Over 500 Reserve Marines provided security for 14,000 Haitians and 30,000 Cubans in refugee camps at Guantanamo Bay, Cuba. Eighty-eight Marine Reservists also provided maintenance support for 45 days at Camp Lejeune, North Carolina, backfilling active forces

deployed in support of operations at Guantanamo. Over 100 Marine Reservists served as linguists, international police monitors, and equipment maintenance personnel supporting Operation Uphold Democracy. One hundred Reserve engineers and military police participated in a joint training exercise to rebuild a trauma hospital in Tirana, Albania. Over 500 additional Reservists supported other Marine Corps operations and exercises in Norway, Hawaii, Korea, and Thailand. Over 50 reserve intelligence personnel supported national, theater, and service agencies, developing products disseminated both within the intelligence community and to operational forces; deploying in support of Operation Provide Promise; and serving as attaches and observers in the Former Yugoslav Republic of Macedonia and states of the former Soviet Union.

AIR NATIONAL GUARD

During FY 1995, in addition to supporting Operation Joint Endeavor, the Air National Guard performed over 88,000 workdays in support of AC missions, including airlift, aerial refueling, communications, intelligence, civil engineering, and medical support. Air National Guard A-10s deployed to Aviano, Italy, for 120 days of participation in Operation Deny Flight over Bosnia and Herzegovina. Every day of the year, the Air Guard provides KC-135 aerial refueling aircraft for movement of fighter aircraft between CONUS and Europe, while C-130 aircraft augment the airlift mission. Air National Guard medical teams in Zimbabwe provided training in disaster preparedness, trauma life support, and self-aid/ buddy care, while optometry teams deployed to the Republic of Georgia provided eye care and over 2,500 pairs of glasses in a two-day period.

AIR FORCE RESERVE

The Air Force Reserve contributed over 175,000 man-days in direct support of the active component in 1995. Air Force Reserve air crews perform up to 30 percent of the Air Mobility Command's peacetime flying mission. The entire Air Force Reserve fleet of fighters, bombers, tankers, transport, and rescue aircraft are fully integrated and provide OPTEMPO relief for their active duty counterparts. During FY 1995, Air Force Reserve C-130 airlifters supported the Multinational Force in Haiti, while C-141 and C-5 airlifters and KC-135 aerial refueling aircraft supported the UN withdrawal from Somalia and humanitarian assistance efforts in Rwanda. Over 400 Air Force Reserve pilots and support personnel participated in Operation Deny Flight over Bosnia and Herzegovina. Air Force Reserve civil engineering, security police, medical, and communications personnel supported Operation Uphold Democracy, while other Air Force Reservists participated in the European Command's military-to-military contact program. Many other significant contributions continue to be made in areas such as international peacekeeping (Operations Deny Flight and Southern Watch), search and rescue, counterdrug operations, firefighting, space launch support, weather observation, and Operation Joint Endeavor.

COAST GUARD RESERVE

During FY 1995, the Coast Guard Reserve initiated Team Coast Guard, which assigns Reservists directly to AC units for training. To facilitate Reserve training, commanders plan for seasonal surges in operations, as well as OPTEMPO increases resulting from natural disasters and other unanticipated events. Coast Guard Reservists responded to multiple disasters, including responding to an oil pipeline incident in Houston; floods in Texas and the Midwest; and Hurricanes Felix and Luis. The Coast Guard Reserve also participated in Operation Uphold Democracy.

MAINTAINING AND IMPROVING RESERVE QUALITY OF LIFE

Improved quality of life (QOL) enhances readiness. Over the past 25 years, much has been done to place members of the reserve components on equal standing with their active counterparts with regard to benefits, access to military facilities and services, recruiting incentives, involuntary separation incentives, and training. Reservists often face pressures and concerns that their active counterparts do not; they must balance civilian employment commitments with voluntary military service and excel at both.

Taking the Initiative

In an effort to improve RC quality of life, the Department has developed new initiatives in family readiness and employer support, protections against economic loss, and quality of participation.

FAMILY SUPPORT READINESS

DoD initiatives are allowing Reserve component families to be better informed about benefits and entitlements and better prepared in event of a mobilization. In 1995, the first-ever instruction on RC family programs made it a command responsibility to develop family readiness plans. In the National Guard, there are now 54 full-time state family program coordinators. The Department is also preparing a range of initiatives to maximize opportunities for Reservists and their families to participate in military community life.

EMPLOYER SUPPORT

The National Committee for Employer Support of the Guard and Reserve (NCESGR), established in 1972, developed and implemented the first-ever partnership among employers/supervisors, Reservists, and military commanders. The partnership draws on the strengths of NCESGR's past programs as well as new, innovative employer-support initiatives to lead to win/win solutions for DoD and America's employers. One proposal recently submitted to Congress would establish a program of income insurance for Reservists involuntarily ordered to active duty for more than 30 days. Initiatives are also under way to address a long-standing concern about the impact on small businesses caused by the prolonged absence of Reservists.

Implementing Legislation

The Department continues to implement recent legislative actions affecting QOL. These include:

- The Uniformed Services Employment and Reemployment Rights Act (USERRA) of 1994, which President Clinton signed into law on October 13, 1994, clarifies and strengthens the employment and reemployment rights, obligations, and responsibilities of all members of the uniformed services who return to civilian life after military duty or training. The new law continues to ensure protection against discrimination, retention in employment, promotions, or other benefits of employment. It supports the premise that upon completion of active military duty, returning service members are to be reinstated to their civilian jobs without loss of seniority, status, or pay.
- The Reserve Officer Personnel Management Act (ROPMA), enacted with the FY 1995 Defense Authorization Act, becomes effective on October 1, 1996. ROPMA constitutes the first comprehensive overhaul of reserve officer personnel management statutes since the Reserve Officer Personnel Act of 1954. It involves over 200 changes to existing law and will affect approximately 250,000 officers not on the active duty list. ROPMA provides flexibility in the managing of Guard and Reserve officers, provides career visibility to individuals, and will help

maintain a cost-effective RC personnel structure. DoD is actively updating Guard and Reserve manpower and personnel policies in conformance with ROPMA.

Making a Difference for Reserve Members and Families

Montgomery GI Bill benefits for Selected Reserves have been a major recruiting incentive for the RC. The Department supports proposed legislation that would expand benefits. Proposed legislation would provide an amount not to exceed $350 per month above the basic Montgomery GI Bill-Selected Reserve benefit to individuals who have a skill or specialty designated by the Secretary concerned or are in a critical unit as designated by the Secretary concerned. The legislation also includes an additional incentive to attract trained service members leaving active duty into the Guard and Reserves. Service members leaving active duty who affiliate with a National Guard or Reserve unit designated as critical, or are in a critical skill or specialty designated by the Secretary concerned, would be eligible for this additional benefit in exchange for an additional six year commitment. This benefit would be in addition to the service member's active duty Montgomery GI Bill benefits.

Through the Reserve Component Transition Assistance Program, the Department has successfully reshaped and balanced the Reserve Forces. The transition program includes Special Separation Pay, Early Qualification for Retired Pay, continued eligibility for commissaries and exchanges, and extension of Montgomery GI Bill educational assistance. The program will enable the Department to effectively complete almost 90 percent of its drawdown and restructuring plans by the end of FY 1996.

Innovative Readiness Training Conducted in Communities and Support for Specific Youth Programs

Every day, citizen-soldiers, sailors, airmen, and marines provide a critical link between the military and civilian communities. DoD's involvement in providing support and services for eligible organizations and activities outside DoD -- initially implemented under the 1993 Defense Authorization Act and continued under the 1996 Defense Authorization Act -- has been particularly beneficial in strengthening that relationship and in improving readiness. Readiness training is conducted by combat support units and individuals -- especially from the Guard and Reserve -- off base and within communities throughout the United States, its territories, and possessions. These units and individuals hone their wartime skills while working in partnership with the community in a manner that does not compete with the private sector or other governmental agencies. Combat support units and individuals benefit by training in a more realistic hands-on setting, and the community benefits by receiving needed health care, engineering, or infrastructure support, thus providing taxpayers an added value.

INNOVATIVE READINESS TRAINING INITIATIVES

More than 20 engineering/infrastructure and seven health care programs have been conducted in 24 states. Following is a sample:

- Winslow Indian Health Clinic -- Army and Air Force Reserve personnel (doctors, nurses, and technicians) provided excess medical equipment and health care support to over 15,000 Native Americans in Winslow, Arizona, while also receiving realistic hands-on training.
- Kotzebue Care 95 -- Alaska National Guard personnel and Navy and Marine Corps Reservists conducted medical and engineering training in six remote Eskimo villages.
- GuardCare -- National Guard units and personnel conducted readiness training exercises in communities in 20 states (Alabama, Arizona, Colorado, Iowa, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, Nevada, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Washington, and Wisconsin). Readiness training for medical

personnel included disease and nonbattlefield injuries and preventative health care, while underserved communities received medical services such as inoculations, medical screenings, and health care education.

- Careforce -- National Guard personnel received hands-on medical readiness training working with civilians in inner-city trauma centers. The program executed in five states (Alaska, California, Tennessee, Missouri, and South Carolina) integrated new technology to provide military trauma personnel with vital experience, while also supporting underserved Americans with medical/ public health services.
- TRANSAM (Transfer of DoD Excess Medical and Other Supplies to Native Americans) Project -- This program transfers excess DoD medical and other supplies to Native American communities. Army Reserve, Air Force Reserve, and Marine Corps Reserve personnel received training in air and ground transportation, loading, and movement. Supplies and equipment in the amount of $6M were delivered to 126 Native American urban health facilities around the country.
- Reef-Ex -- Army and Naval Reservists and Army National Guard personnel used surplus tanks to construct artificial reefs in U.S. coastal waters in eight states (Alabama, Delaware, Florida, Georgia, Louisiana, Maryland, New Jersey, and New York). Military training was accomplished in hazardous material handling, rail loading, port operations, and barge loading and movement.

SPECIFIC YOUTH PROGRAMS

DoD has traditionally supported specific residential and nonresidential youth training programs which provide National Guard and Reserve personnel the opportunity to enhance their leadership, communication, and management skills. These efforts are provided in addition to regular training and focus upon at-risk youth. Examples include:

- ChalleNGe -- A National Guard-run 22-week residential program for 16-18 year-old high school dropouts who are unemployed, drug-free, and currently not involved with the criminal justice systems. The program currently operates in 15 states (Alaska, Arkansas, Arizona, Georgia, Hawaii, Illinois, Louisiana, Maryland, Mississippi, North Carolina, New Jersey, New York, Oklahoma, Virginia, and West Virginia). Core components of the program include citizenship, GED/high school diploma attainment, life-coping skills, community involvement/projects, health and hygiene, skills training, leadership, and physical training.
- Starbase -- A National Guard, Navy, Air Force Reserve nonresidential inner city school program operating in 14 states (California, Florida, Iowa, Kansas, Michigan, Minnesota, North Carolina, Oklahoma, Oregon, South Dakota, Texas, Vermont, Virginia, and Wyoming) that exposes inner city students in grades K-12 to real-world applications of math and science through experiential teaming, simulations, and experiments in aviation and space-related fields.

CONCLUSION

The Total Force concept has evolved over the last 25 years into a viable, well-articulated policy. Today, the National Guard and Reserve contribute significantly to America's National Security Strategy. Whether they are ensuring the decisive force necessary to fight and win two nearly simultaneous MRCs, supporting emerging democracies, keeping the peace, or helping to discourage the proliferation of weapons of mass destruction, the National Guard and Reserve remain involved. Every day around the globe, Reserve Forces are working hand-in-hand with their active duty counterparts to secure peace and freedom.

A strengthened Total Force policy has enabled the nation to return to a sturdy and well-tested American principle: in a democracy the responsibility for national defense must be shared by a vigilant active

component force, ably supported by a ready Reserve composed of well trained and equipped citizen soldiers, sailors, airmen, and marines. The reserve components are full partners with the active components in Total Force training and performance standards. As the reserve components assume increasing peacetime and wartime responsibility in the Total Force, America is beginning to understand the sacrifices its citizen-soldiers make in the interest of the national defense. The Department and the American people have demonstrated their willingness to support the Reservists, their families, and employers as they continue to play an even greater role in America's future.

Chapter 27

C^{4}I, INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

INTRODUCTION

The world is undergoing a fundamental restructuring in many dimensions and at an extraordinary pace. Changes in technology and the rapid assimilation of that technology in the marketplace are resulting in quantum changes to products, services, and organizations. Information ownership, stewardship, access, and possession are recognized as measures of power and influence. Technology is rapidly diffusing this power downward to individuals, and outward to those organizations and nations best equipped to exploit it. This pattern of change represents both an important opportunity and a demanding challenge for establishing and meeting DoD command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^{4}ISR) requirements.

Through C^{4}ISR programs, DoD collects, processes, produces, disseminates, and uses information. DoD must have agile, sustained access to and control of the information and the information environment needed for mission execution and support. Military commanders must be able to synchronize and integrate, both in time and battlespace, high-tempo operations anywhere in the world. Global end-to-end information connectivity among U.S. and allied forces will be a critical mission capability and force enhancer for worldwide readiness, mobility, responsiveness, and operations. System interoperability and information integration must be achieved on the battlefield to maximize warfighter benefits, to significantly improve joint and multinational operations, and to support the National Command Authorities. Modernized information systems must be implemented to support reengineered functional processes.

DoD must accelerate the harnessing of information to improve military power. The Department's overarching C^{4}ISR goal is to establish and maintain information dominance for DoD in support of military operations and the National Security Strategy. Through application of C^{4}ISR capabilities, DoD will dramatically improve information quality and allow a comprehensive streamlining of decision making processes. Cross-functional program integration is a key element of C^{4}ISR, and a major initiative underway is development of an integrated C4ISR architecture. Program integration ties together initiatives within each C4ISR function to:

- Provide the secure sensor-to-shooter information capabilities and enhanced decision processes needed by warfighters and other command authorities to maximize military power.
- Enable commanders of military forces and managers of support activities to use information to achieve the highest effectiveness, agility, and operational efficiency, while limiting the enemy's ability to do the same.
- Integrate advanced technology for management of information into evolving warfare concepts.
- Assure a global capability to share and exchange comprehensive, timely information, and achieve interoperability across the battlespace.
- Ensure intelligence and counterintelligence capabilities are integrated into decision processes, and support the operational needs of DoD and national decision makers.

C^4ISR ARCHITECTURE DEVELOPMENT AND INTEGRATION

The Department of Defense needs a unified approach for development and evaluation of information and architectures. To meet this need, the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C^3I)) formed the C^4I Integration Support Activity (CISA) in 1995. CISA is developing and coordinating a common set of Architecture Terms and Definitions, and supporting the working group that is developing the Standard Data Element-Based Automated Architecture Support Environment and the Automated Architecture Tool Suite.

CISA's first architecture effort supporting the C^4ISR functional area is generating a Capstone C^4I Architecture. As a preliminary step, CISA will develop an overarching framework for C^4ISR operational and systems architecture creation by DoD components. By adhering to this framework, CISA and DoD components can analyze architectures consistently, and determine information exchange requirements, as well as the frequency, timing, and conditions affecting those exchanges. CISA is supporting development of an integrated C^4I systems architecture at the U.S. Southern Command. The C^4I Systems Architecture will be a template for further command-level C^4I systems architecture integration. A joint C^4I Tactics, Techniques, and Procedures architecture is also being developed for command and Service use as a guidepost for conducting joint C^4I operations. CISA will compare and contrast operational, systems, and technical architectures to develop a set of common architecture generation practices, enabling consistent comparison of future architectural efforts by any DoD component.

INFORMATION WARFARE

The importance of information warfare (IW) extends far beyond military operations. The United States, perhaps more than any other nation, has embraced the use of information technology. Virtually every facet of American life is affected by electronic media -- television, radio, banking, communications, and the entire range of manufacturing, energy, and service industries. Each of these, in turn, affects national security. The enormous U.S. dependence on information and its supporting infrastructure simultaneously enables fielding and effective employment of the world's premier military force, and creates significant IW vulnerabilities for the United States, which DoD's IW initiatives are addressing.

IW seeks to achieve information superiority by affecting adversary information, information-based processes, and information systems while defending one's own information, processes, and systems. Driven by rapidly advancing technology, the Department's IW strategy provides a force which can operate with measured lethality and increased precision across the entire conflict spectrum far more effectively than any potential adversary. Defensive IW addresses the vulnerabilities inherent in DoD's information systems and processes, while offensive IW addresses the opportunities presented by an adversary's dependence on information systems and processes. IW is based on the need for, and use of, information in all phases of national activity -- from peacetime operations through conflict.

The Office of the ASD(C^3I) is the central DoD point of contact to establish IW policy and provide guidance and program oversight; centralize planning, coordination, and cross-service IW program management; and in conjunction with the Under Secretary of Defense for Policy, ensure IW coordination with other federal agencies and the civilian community. Joint Staff and Service organizations address specific IW issues. The Army Land IW Activity, the Navy IW Activity, and the Air Force IW Center are examples of Service initiatives to prepare their forces for the IW environment. The Air Force has gone further; its first IW squadron, activated in June 1995, will reach initial operational capability in August 1996.

Effective intelligence support is crucial to achieving IW goals. A National IW Intelligence Estimate is underway, while an Intelligence Community Assessment has been completed and published. The Defense Intelligence Agency has realigned resources to provide detailed assessments of critical nodes and information infrastructures to support deliberate planning and target selection under a variety of scenarios. The Service schools, as well as other Defense-related educational institutions, are introducing IW into their curricula. The National Defense University (NDU) graduated its first IW-educated class in 1995, doubled the number of students in the 1995-1996 program, and will incorporate IW into all NDU college curricula. IW is now being included in wargame scenarios and in modeling and simulation initiatives.

DoD is updating its IW policies and strategies. Several operational commands have undertaken defensive IW projects, and Service and agency red teams completed initial assessments of the National and Defense Information Infrastructures. DoD is studying the commercial sector's IW impact on the military and vice versa, and defining strategies to improve this relationship.

COMMAND AND CONTROL

Command and control (C^2) systems provide the facilities, sensors, and equipment necessary to manage strategic, conventional, and special operations forces. Global end-to-end C^2 information exchange among United States and allied forces will be provided by the Global Command and Control System (GCCS), which will provide the warfighter a fused picture of the battlespace, and support deployment and employment of forces. GCCS is being fielded to the warfighting CINCs, Service headquarters, and other components.

DoD continues restructuring, consolidating, and downsizing strategic C^2 systems to provide effective C^2 of nuclear forces while achieving significant cost savings and manpower reductions. Preliminary findings from a broad Nuclear C^3I Review shows Nuclear C^3I can reduce further dependence on the Defense Satellite Communications System, and rely on Milstar for survivable connectivity requirements, but that DoD should continue with the current command center architecture of air, mobile ground, and fixed ground nodes. Also, the Department continues acquiring and improving theater and tactical C^2 capabilities critical to respond rapidly to regional crises. For example, the Department is improving Airborne Warning and Control System radar range and reliability, identification, communications, and navigation to help ensure future responsiveness of this vital platform.

DoD must have assured access to and use of the radio frequency spectrum for both effective C^4ISR and weapon system employment and execution. Private sector requirements must be addressed in a logical, systematic manner without jeopardizing military readiness and national security. Consideration of the impacts of spectrum reallocation on cost, military operations, and ultimately on national security, must be a priority.

The Department is proceeding with Battlefield Digitization to enhance situational awareness. DoD also expanded and reinforced its 1991 common data link policy by establishing Link 16 as the Department's primary data link for C^2, intelligence and, where practical, weapon system applications. This permits standardized, interoperable, data link support directly to the battlefield operator, providing integrated tactical C^2 situation awareness never before available. The Army's Battlefield Combat Identification (Combat ID) System will be included in a combination of studies and demonstrations to determine long-term Combat ID solutions for the ground environment. For the air, DoD is cooperating with NATO in developing a new waveform for the Mark XII friend or foe system.

DoD participates actively in NATO's consultation, command, and control restructuring process to improve system integration, coordination, and overall effectiveness and efficiency, and achieve

significant resource savings. The Department is discussing interoperability issues with NATO Partnership for Peace nations, and is also preparing for operations with nontraditional partners.

DEFENSE INFORMATION INFRASTRUCTURE

The Defense Information Infrastructure (DII) is the shared or interconnected system of computers, communications, data, applications, security, people, training, and other support structures serving DoD's local and worldwide information needs. By addressing DoD's information technology infrastructure as a single entity, the DII focuses planning on interoperability, efficiency, and end-to-end user services. The DII provides information transfer (communications) and processing (computer infrastructure) resources that: (1) connect DoD mission support, C^2, and intelligence computers and users through voice, data, imagery, video, and multimedia services; and (2) provide information processing and value-added services to Defense Information Systems Network (DISN) subscribers. The DII is DoD's portion of the National Information Infrastructure (NII).

The Defense Information Systems Agency (DISA) and the Services share DII management and operations responsibility. DISA provides overall systems engineering and end-to-end management, and also manages and operates DII common user elements. The Services manage and operate DII elements providing an information technology infrastructure on Service facilities.

Communications

DISN is DoD's consolidated worldwide enterpriselevel telecommunications infrastructure, made up of the sustaining base, a long-haul and deployable transfer utility, as well as information service applications. The long-haul transfer utility connects DoD locations worldwide and provides the basic telecommunications infrastructure. It is comprised of terrestrial and satellite communications assets (government and commercial), supporting DoD's peacetime requirements, while allowing for a surge in capacity to meet crisis or wartime needs. DISN information service applications provide value-added service to the user, or interface with user-owned equipment, such as secure and unsecure voice, data, electronic mail, video teleconferencing, imagery, and directory services.

Early phases of DISN implementation involved adopting common standards and integrating several separate, disparate DoD networks and services. Currently, the program is acquiring and implementing a synchronous optical network backbone service providing high bandwidth, improved interoperability, greater reliability, and enhanced information transfer. DISN will maintain technical currency through the prudent insertion of new technologies and leading edge services (LES). At this time, DISN-LES consists of interconnected asynchronous transfer mode switches supporting both classified and unclassified services and users throughout the continental United States. Once mature, and determined cost effective, these LES will be incorporated in core DISN service.

A landmark of interagency and industry cooperation, the Defense Message System (DMS) is a DISN information service application providing all electronic messaging services for DoD. DMS will allow phase-out of the existing, archaic Automatic Digital Network message system. DMS will provide high grade secure services, and reliable leading edge e-mail messaging and directory services, supporting deployed warfighters, theater commanders, and individual messaging users throughout DoD.

The Department is upgrading and improving its Electronic Commerce/Electronic Data Interchange (EC/EDI) infrastructure to provide a single EDI interface to industry, and a standard interface for legacy systems. DoD's EC/EDI infrastructure currently supports many Federal Agencies, and includes links to industry through value-added networks (VANs). Accomplishments this year include network entry point

enhancements, standard legacy system gateways, expanded problem resolution procedures, updated VAN license agreements, and preparations for migration to the DMS for business quality messaging.

The Department continues enhancing tactical communications to provide secure, survivable, and interoperable systems for joint and combined operations of conventional forces. Acquisition of new tactical communications systems continues, such as the Single Channel Ground and Airborne Radio System (SINCGARS), for which DoD has approved a second full-rate production source. Preplanned product improvements and system enhancements for fielded systems such as the SINCGARS, Mobile Subscriber Equipment, and Tri-Service Tactical equipment will ensure continued interoperability, capacity, and new information exchange capabilities that will enhance efforts to digitize the battlespace.

Computer Infrastructure

Operation of the Department's information systems relies on the computer and communications infrastructure. In the 1993 Base Realignment and Closure process, the President and Congress approved the consolidation of 59 Service and agency data centers into 16 DoD megacenters to improve information processing and reduce costs. DoD established a phased implementation approach to minimize risk and customer service disruption during an efficient and cost effective consolidation process. Currently, DISA is migrating workload to the megacenters from sites identified for consolidation. Approximately 60 percent of the workload has been transferred, with completion planned by the end of FY 1996. After the transfer is complete, DISA will optimize megacenter performance. Data center consolidation net savings for FY 1994 to FY 1999 are projected to be in excess of $470 million.

Consistent with the objectives of data center consolidation, as well as recommendations by the Commission on Roles and Missions of the Armed Forces, the Department is assessing additional opportunities for achieving megacenter operational economies and efficiencies. DoD is currently developing and evaluating a series of options to effectively provide global information processing services to meet peacetime, crisis, and wartime requirements into the next century. Options being considered include further megacenter consolidations, outsourcing megacenter operations and maintenance (e.g., government-owned, contractor-operated facilities), or some combination thereof. Study results are being readied for presentation to Congress.

Data

In 1995, the Department shifted data administration emphasis from developing procedures to establishing a common DoD vocabulary. The Department approved over 8,500 data standards, and incorporated them in the DoD Enterprise Data Model. DoD's functional communities are developing data models within their own areas, and integrating them into the DoD Enterprise Data Model.

Information about DoD data is maintained in the Defense Data Repository Suite (DDRS), which also provides the electronic approval process for DoD data standards. DoD moved DDRS to a larger computer and implemented software upgrades to improve support to a growing user population. Also, DoD continues investigation to find a commercial product satisfying the majority of DoD data repository requirements. DoD functional areas are doing extensive work to improve data quality through business process reengineering, migration system selection, procedural guidance, and development of data migration plans. In the future, DoD will emphasize using standard data in information systems, and storing standard data in shared databases.

Information Systems

In 1993, the Secretary of Defense directed all functional areas to select standard information systems and applications, and eliminate legacy systems. To date, the Department has identified 1,849 information systems, of which functional communities have selected 247 as migration systems. DoD will eliminate at least 1,079 of these legacy systems by the year 2000.

In 1995, the Department established the Software Management Initiative to improve software management for both weapon systems and information systems, and to enhance DoD's ability to acquire and deliver software that meets or exceeds user requirements and expectations. The initiative encompasses all aspects of software management from acquisition and development through implementation, operation, migration, termination, or replacement. A Software Management Executive Board, and supporting Software Management Review Council, oversee improvements in software policy, education, reuse, application of commercial off-the-shelf (COTS) software, and adoption of commercial best practices.

Information Systems Security

Growing dependence on an unprotected information infrastructure creates vulnerabilities and operational readiness risks that have been highlighted by the Joint Security Commission, the Commission on Roles and Missions of the Armed Forces, and other independent reviews. The security of information systems and networks is one of the major security challenges of this decade and beyond. To meet this challenge, the Department has an information systems security (INFOSEC) strategy to protect the confidentiality, availability, integrity, and authenticity of national security and other Defense-related information produced and exchanged electronically. DoD is significantly expanding its ongoing efforts with other government departments and agencies, and with industry, to:

- Develop comprehensive INFOSEC policies supporting efficient allocation of scarce resources.
- Identify, develop, and deploy DII protective security technologies, and implement the capability to react to attacks upon the DII.
- Identify INFOSEC concerns early in system development and acquisition, and address INFOSEC throughout the acquisition cycle.
- Define and implement effective security management processes, and improve INFOSEC training and equipping of DoD information system operators and users.
- Develop, deploy, and operate effective attack and intrusion detection systems.

DoD must guide development of security technologies by sharing systems security expertise with industry to ensure integration of security functionality into 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 promoting interoperability and consistency.

Additionally, the Department will champion creation of 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 NII Task Force and implementation of the security recommendations in the National Performance Review's information technology report. DoD intends that INFOSEC technologies, services, products, and mechanisms developed to meet DII needs will also be adaptable to NII applications. DoD is also working with the user community to better understand security requirements, to improve implementation of security solutions, and to provide INFOSEC implementation support to civil agencies.

BUSINESS PROCESS REENGINEERING

DoD established the Business Process Reengineering (BPR) support program to redesign the Department's business processes and to achieve improvements in measures of performance. BPR is a major challenge in an organization as large and as complex as DoD, but one promising dramatic improvement in the way DoD carries out its missions. The ASD(C^3I) manages the overall BPR support program, including cost effective training, methods, tools, hotline support, and a variety of other support services. Organizations throughout DoD conduct BPR projects using these capabilities. BPR tools and techniques can be used to analyze and improve virtually any kind of process or activity, and BPR projects are underway at all levels and within all DoD functions. Some of the Department's BPR projects are oriented toward mission effectiveness and increased readiness, while others target management improvements and cost savings. DoD has achieved significant improvements in effectiveness and efficiency through reengineering individual functional activities.

DoD, the National Academy of Public Administration, the National Performance Review, and several other partners established joint linkages to BPR information, training, government reinvention materials, including a new BPR CD-ROM developed by DoD as a self-contained College of Process Innovation. The CD-ROM features the latest government and industry information on BPR and a toolset called TurboBPR, to facilitate completing BPR projects at the desktop. TurboBPR performs all the steps of planning, baseline analysis, activity costing, and business case development.

INTELLIGENCE AND COUNTERINTELLIGENCE

Intelligence

Intelligence capabilities infuse the policy process with a better understanding of the capabilities and intentions of adversaries and rivals, and are essential to planning and executing successful military operations. Intelligence assists in defining requirements for new weapon systems, doctrine, organizations, and training, and the threats these are likely to face.

In 1995, the Secretary of Defense and the Director of Central Intelligence (DCI) formalized their joint intelligence review process by agreeing to use the overall Defense review process to examine and resolve intelligence issues. The Defense Resources Board (DRB) was expanded to include appropriate representation from the intelligence community. The expanded DRB provides the Secretary of Defense with recommendations for final decisions regarding intelligence programs, and ensures decisions affecting both intelligence and non-intelligence activities are made in relation to one another. Decisions affecting National Foreign Intelligence Program resources are made in coordination with the DCI.

DoD and the Intelligence Community reviewed intelligence and defense advanced research and development (AR&D) investment trends and strategy in the National Foreign Intelligence Program, the Joint Military Intelligence Program, and the Tactical Intelligence and Related Activities. They identified and addressed important issues, problems, and investment gaps in critical technology and applications areas. DoD also formed a technical advisory committee to improve management of the Advanced Sensor Applications Program (ASAP), an AR&D program addressing a spectrum of promising nonacoustic antisubmarine warfare (NAASW) and undersea warfare technologies. With additional congressional support, the DoD Foreign Materiel Program (FMP) acquisition and exploitation fund continued a major acquisition program begun in FY 1994. To enhance intelligence support to civilian agencies responding to natural and technological disasters, the Department led development of a prototype Pacific regional disaster center, and tasked the Defense Intelligence Agency (DIA) to be the single continuously-manned

point of contact to receive requests for assistance and alert Washington-area defense and intelligence elements of disaster relief and recovery requirements.

Foreign governments continue practicing denial and deception techniques against United States intelligence collection efforts. Early in 1995, the Deputy Secretary of Defense and the DCI directed renewed efforts, supported by Congressional language, to develop strategies and systems to neutralize these emerging threats.

The Defense Science Board (DSB) examined DoD-wide mapping and geospatial information needs, and recommended expediting the move away from hardcopy maps and charts, toward digital geospatial databases as the geospatial foundation for military information systems. An integrated product team under Joint Chiefs of Staff guidance is reengineering the mapping requirements process to focus on information needs, contingency responsiveness, and expansion of the geospatial database, and to establish metrics linking geospatial needs to force readiness measurements.

A task force was established to identify and study options for improving the management of imagery-related activities. As a result of this study, the National Imagery and Mapping Agency (NIMA) is being established by consolidating the Defense Mapping Agency, the Central Imagery Office, and other activities into a single organization. NIMA will achieve full operational capability by October 1, 1996. Although under the authority, direction, and control of the Secretary of Defense, it will support all national intelligence customers.

Counterintelligence

The DoD Foreign Counterintelligence Program (FCIP) combines operational and analytical elements of the DoD components, and provides counterintelligence (CI) support for protection of forces, military operations, systems development, and critical technologies. CI is also a full partner in counterterrorism, counterproliferation, and IW programs.

CI components are critical to the security of deployed operational forces. DoD CI components respond to specific CI investigation requests, provide defensive antiterrorism services, satisfy CI information collection requirements, perform counterespionage operations to dissipate foreign intelligence service resources, and provide CI input to command contingency plans. CI personnel regularly accompany battle groups at sea and 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's CI customers include the National Command Authorities, all DoD components and functions including CI itself, the Security Countermeasures community, other intelligence disciplines (especially signals intelligence and human intelligence), the law enforcement community and the court system (for neutralization and prosecution of national security crimes), Congress, and other members of the national CI community.

The Department is reengineering and restructuring all CI processes to enhance mission effectiveness and achieve efficiencies. DoD is developing the Defense CI Integrated Information System (DCIIS) to achieve the interoperability and unity of effort required in the joint operating environment, and provide rapid and consistent CI information delivery to satisfy Service and On-Site Inspection Agency requirements. The Theater Rapid Response Intelligence Package, the COTS-based tactical front end of the DCIIS, is already being fielded to provide the CI agent in the field with capability to send and receive reports and digital imagery through a variety of defense and national-level communication systems.

While DISA and the Air Force Information Warfare Center continue expanding their C^2 protection missions, DoD has had a limited capability to conduct CI investigations into computer intrusions to determine who the perpetrator is (foreign intelligence service, hacker, etc.), and to develop a case for prosecution. DoD is exploring the means to stand up a DoD computer intrusion forensic laboratory, which will combine with DoD's current protection capability to significantly improve the Department's ability to determine the threat to DoD information systems, and provide a viable deterrent.

SURVEILLANCE AND RECONNAISSANCE

The focus of surveillance and reconnaissance is directly supporting warfighter dominance of the battlefield. Battlefield dominance requires: (1) battlespace awareness to provide warfighters with better, missionfocused and tailored understanding of all force dispositions, capabilities, and intentions; (2) an advanced C^4ISR infrastructure to disseminate battlespace awareness information rapidly; and (3) precise targeting information for precision guided weapons, and other lethal and non-lethal offensive systems. Improved intelligence, reconnaissance, and surveillance provides the tools to counter the fog of war, and to enable operations to take place within the opponent's decision cycle time. Thus, United States forces can take and hold the initiative, increase operational tempo, and concentrate power at times and places of their choosing.

In FY 1994, DoD created the Defense Airborne Reconnaissance Office (DARO), jointly manned by the USD(A&T) and the ASD(C^3I), to unify airborne reconnaissance architectures, and enhance the acquisition of manned and unmanned airborne assets and associated ground systems. DARO developed an Integrated Airborne Reconnaissance Strategy for a comprehensive defense-wide airborne reconnaissance capability. In concert with space-based assets, this capability will meet warfighter needs through the year 2010.

Extended reconnaissance -- providing responsive and sustained intelligence data from anywhere within enemy territory, day or night, regardless of weather, as warfighter needs dictate -- is the strategy's cornerstone. A defense-wide objective architecture that is an integral part of the CI For The Warrior information architecture will guide selecting and developing airframe, sensor, information processing, and communications technologies. Objectives include shortening the cycle for providing intelligence products to the warfighter, and providing continuous synoptic battlefield coverage, including instantaneous sensor-to-shooter transmission of time-critical targeting information.

DARO oversees the Defense Airborne Reconnaissance Program, which consists of U-2, RC-135, and EP-3 aircraft programs, non-lethal tactical and endurance unmanned aerial vehicles (UAVs), the Distributed Common Ground System (DCGS), advanced reconnaissance technology and sensors, and the common data link. DARO develops, demonstrates, and acquires improved airborne reconnaissance capabilities, and performs system-level tradeoffs for manned aircraft and UAVs, sensors, data links, data relays, and associated processing and dissemination systems. DARO establishes and enforces commonality and interoperability standards for airborne reconnaissance systems.

The Advanced Concept Technology Demonstrations (ACTDs) allow DoD to demonstrate and evaluate promising concepts through early user involvement in realistic operational scenarios. ACTDs were initiated in FY 1994 for the Medium Altitude Endurance UAV (Predator), the Conventional High Altitude Endurance (HAE) UAV (Global Hawk), and the Low Observable HAE UAV (DarkStar). Each ACTD is progressing on schedule within its rigid cost objectives. The Department has terminated the Hunter UAV program and initiated a Tactical UAV (TUAV) ACTD in place of the Maneuver UAV program. The TUAV ACTD will develop and demonstrate a reliable, supportable, and maintainable system to satisfy the warfighter's top priority requirement for a timely and accurate battlefield picture. Pioneer continues

providing a much-needed interim capability and operational capability. The Predator UAV demonstrated its military utility by effectively supporting Operations Provide Promise and Joint Endeavor in the Bosnia theater of operations. The Predator UAV ACTD ends in mid-1996, and the program will transition to production.

DARO led the restructure of the Joint Service Imagery Processing System (JSIPS) to introduce a more cost effective, functionally equivalent system. The restructuring plan was presented to and accepted by Congress. DoD is migrating ground processing station development to a common, interoperable architecture called the DCGS. Through the DCGS framework, DoD is integrating common imagery ground and surface systems, airborne reconnaissance signals intelligence (SIGINT) ground systems, and multi-intelligence reconnaissance ground systems. DARO is leading DoD's advanced airborne SIGINT architecture assessment to develop an integrated approach to providing advanced SIGINT capabilities. DARO developed the Airborne Reconnaissance Technology Program Plan as a comprehensive technology roadmap for transitioning into operational use new technologies to improve reconnaissance and intelligence.

SECURITY AND CLASSIFICATION

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.

Executive Order 12958, Classified National Security Information, provides new opportunities to revamp DoD's information security practices to enhance effectiveness and achieve savings. DoD created two structures to help achieve declassification efficiency. One structure, including private sector historians, will advise DoD on the most historically desirable records requiring the highest review and declassification priority. The other structure will ensure declassification consistency throughout the Department. The Central Imagery Office (CIO) and DIA led the declassification review of historical intelligence and mapping imagery. DoD began delivering declassified imagery to the National Archives and Records Administration in mid-1995 and will complete the transfer by early 1996. The eventual declassification of more than 866,000 images will provide public access to imagery to support environmental studies and other civilian applications.

Executive Order 12968, Access to Classified Information, signed in August 1995, strengthens personnel security for all government agencies and contractors, while ensuring fair treatment for the men and women entrusted to protect the nation's secrets. It requires reciprocal acceptance of facilities and personnel clearances by all agencies; clearances only for those with a job-based need; and uniform standards for clearance investigation and adjudication. The order completes a process of careful honing, spurred by Joint Security Commission findings, by intelligence and defense agency reviews of espionage cases such as that of Aldrich Ames, and by the FY 1995 Intelligence Authorization Act, which contains the legislative underpinnings of several of the order's provisions.

C^4ISR ACQUISITION MANAGEMENT

As the Department's senior information management official, the ASD(C^3I) establishes management and oversight policy and procedures for DoD AISs and Federal Information Processing (FIP) resources.

Oversight

Major automated information systems (AISs) are selected for OSD 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 of special interest. There are currently 43 major AISs in the Department. Of these, 31 are reviewed by DoD's Major AIS Review Council (MAISRC), while oversight of the remaining 12 is delegated to the responsible Service or agency. During 1995, the MAISRC completed 18 major system reviews.

Agency Procurement Requests

While the ASD(C^3I) has redelegated oversight authority for FIP resource acquisition to the Military Services, he still reviews major FIP resources acquisitions ($100 million or more during the full contract life), and retains oversight and approval authority for DoD components. In FY 1995, the ASD(C^3I) conducted oversight reviews of 15 major FIP resources acquisitions with an estimated cost of $7.5 billion, and granted Delegation of Procurement Authority (DPA) or received DPA approval from the General Services Administration (GSA) for 57 acquisitions with an estimated cost of $3.6 billion over the life of the contracts.

In June 1995, GSA raised the DoD agency procurement request (APR) authority threshold to $100 million per contract. This allowed DoD to streamline its APR oversight process, and refocus acquisition oversight around DoD's AIS Strategic Plan. The Office of the ASD(C^3I) will periodically review AIS strategic plan initiatives with the DoD components to identify their direction, objectives and performance measures, and all acquisitions that support them. Ideally, the ASD(C^3I) will provide one initial acquisition approval and one DPA for each initiative, authorizing interim acquisitions needed before the initiative's implementation. DoD intends raising the competitive acquisition threshold from $2.5 million to $10 million, and the sole source or specific make and model threshold from $250 thousand to $1 million.

In January 1995, the Department issued the DoD Nunn-Warner Exempt FIP Resource Acquisitions Policy to life-cycle manage high-value or special interest Nunn-Warner FIP contracts. The ASD(C^3I) now reviews a synopsis of future Nunn-Warner FIP contracts 45 days prior to release of the Request for Proposal or contract award as part of a comprehensive policy framework to manage and assure accountability for these programs and contracts. To stimulate competitive pricing and technology upgrades throughout the life of hardware and COTS software contracts, DoD mandated use of multiple awards and price reduction clauses for indefinite delivery, indefinite quantity contracts, and for requirements contracts.

Life-Cycle Management Reform

Consistent with National Performance Review objectives and DoD acquisition reform efforts, the Department is reengineering the AIS acquisition and life-cycle management oversight process. For example, many of the major AIS review decisions now result from staff-level reviews, without a formal meeting of the MAISRC principals. MAISRC oversight also emphasizes tailoring oversight to the individual characteristics and strategies of each AIS, rather than forcing a one-size-fits-all approach. Integrated product teams will further improve and formalize the flexible, tailored oversight process, ensuring teamwork and early interaction. New policy directives will reflect these improvements, and will integrate the 5000 series weapon system acquisition directives and the 8120 series AIS acquisition directives.

Information Resources Management Performance Assessment

DoD is developing an Information Resources Management (IRM) Performance Measurements Guide. Management must set program objectives; establish lines of accountability and measurable program cost, schedule, and performance criteria; and focus on results and customer satisfaction. The Department is committed to ensuring that well defined, meaningful, measurable, and useful performance measurements are incorporated into IRM strategic plans; acquisition, oversight, and management processes; budget decisions; and performance reviews. Performance measurements will be used to sustain improvement and institutionalize a results-oriented focus.

The ASD(C^3I) is developing the IRM Program Management Performance Management Tracking System (PMPMTS) to link planning, acquiring, and developing AISs and other C^4ISR functions to measurable performance management criteria, and to track program performance. PMPMTS will provide an online performance management toolset to track and assess cost, schedule, performance, and any deviations from the performance baseline of selected C^4ISR acquisition at any program phase. PMPMTS is consistent with congressional direction to develop and implement performance measures and tools to assist Federal agencies in managing government programs.

Information System Acquisition Policy, Practices, and Reviews

DoD developed a guide for assessing component IRM activities, addressing all critical IRM management areas. The guide forces IRM process evaluation based on mission objectives and the financial, technical, and human resources available to achieve those objectives. It includes a scoring template providing immediate feedback on the organization's posture in each IRM area, as well as the Agency's total IRM program.

Personal Computer Plan for 1995-2000

The goal for satisfying DoD personal computer needs is to ensure continuous sources of technologically advanced COTS personal computer hardware and software. Because of rapid changes in microcomputer technology and the inherent difficulties in awarding large contracts and resolving protests, DoD now requires that personal computer contracts be of relatively small scope, limited to a two year maximum ordering term. The military departments must award separate contracts to satisfy their requirements; however, each contract will be open to ordering by the other defense components. To publicize these contracts, the ASD(C^3I) publishes an annual Personal Computer Policy Implementation Plan. The plan ensures there will be sufficient sources to meet the vast majority of anticipated Department-wide needs, and promotes streamlined acquisition of current technology that is compliant with existing standards. It profiles major existing and future DoD personal computer contracts, and identifies alternatives to indefinite delivery, indefinite quantity acquisitions.

INTEGRATION OF C^4ISR

The C^4I Integration Support Activity (CISA) is responsible for integration of all C^4ISR functional areas, C^4ISR architectures, programs, and cross-program evaluations. CISA's mission focus is ensuring C^4ISR systems are integrated, interoperable, standardized, efficient, and effective, and that they provide maximum benefit to warfighters and decision makers.

The Department aggressively reviews current and planned C^4ISR systems, using management oversight and the budget process to resolve problems, and will establish review procedures for new or modified C^4ISR systems to assure adherence to approved standards prior to contract award. CISA reviews DoD component programmatic submissions to ensure capture of interoperability issues and concerns in budget and system proposals. The Department also assesses C^4ISR programs to identify activities of marginal

value that may be reduced or eliminated in order to fund higher value programs, and will identify programs and activities that should be protected from reductions.

C^{4}ISR-RELATED DEFENSE AGENCIES

Central Imagery Office (CIO)

Jointly chartered by the Secretary of Defense and the DCI as the functional manager for imagery, CIO satisfies warfighter imagery needs, as well as those of the nation's military and civilian policymakers. In 1995, CIO provided high-priority, real-time, imagery for targeting and battle damage assessments in Bosnia and Herzegovina, monitoring activities in North Korea and Iraq, several human and natural disaster relief incidents, ongoing drug interdiction operations, and weapons transfers and proliferation. CIO implemented a more flexible access policy permitting greater imagery sharing with NATO in support of Bosnian operations. KH 1-6 satellite imagery declassification was of tremendous benefit to the military and scientific communities. Imagery support to military exercises also received special attention. For example, national-level imagery assets supported over 125 military exercises in 1994, and nearly 150 in 1995 -- more than ever before.

CIO also began a major enhancement to the imagery requirements process by starting the transition to the Requirements Management System (RMS) as a replacement for the COMIREX Automated Management System. With 80 sites worldwide, RMS will provide 3,000 users with immediate feedback on requirements status. Half of the system's users were trained during 1995, and the remainder will be trained in FY 1996. Also, CIO directed an in-depth examination of the exploitation process by the imagery community, and laid out a framework for building an improved, flexible, and more effective imagery exploitation system. CIO fielded the first major system element under its pilot Accelerated Architecture Acquisition Initiative (A^{3}I), installing an innovative Image Product Library (IPL) at U.S. Atlantic Command Headquarters in Norfolk, Virginia. Additional IPLs also came online in the Washington, DC, area, and at U.S. Central Command.

Despite these successes, challenges remain. Among them are integrating new information technology tools, and implementing meaningful training programs for personnel community-wide. These will enable the imagery community to address the programmed imagery collection surge to meet the warfighter's year 2000 needs. Also, as discussed earlier, by October 1996, CIO will be consolidated with DMA into the single organization, NIMA.

Defense Intelligence Agency (DIA)

DIA responded to the real world challenges that emerged during 1995 while downsizing and posturing for the future environment. DIA is a combat support agency as well as a major producer and management element in the defense intelligence community. DIA provided operational forces, defense decision makers, and the U.S. weapons development community with comprehensive intelligence data. DIA also guided the continuing evolution of defense intelligence toward more efficient structures and practices.

DIA provided timely intelligence information on enemy capabilities and intentions for the planning and conduct of military operations under United States, NATO, and United Nations auspices. Operations supported include strike and search and rescue operations in the former Republic of Yugoslavia; United Nations inspection and monitoring missions in Iraq; and peacekeeping in Haiti.

DIA pushed intelligence forward to consumers. DIA coordinated the deployment of multi-agency National Intelligence Support Teams, providing the necessary information flow between the Washington-

area and operational elements during periods of crisis, heightened tension, and military operations other than war. The Joint Worldwide Intelligence Communications System and the Joint Deployable Intelligence Support System were used to provide a seamless communication capability and access to critical information at all decision making levels.

DIA established an Intelligence, Surveillance, and Reconnaissance (ISR) Joint Warfare Capability Assessment team to study future force structures for joint operations and to assess the application of emerging technologies. The results have already changed joint warfighting and intelligence doctrine, and point to ways to optimize mutually supporting intelligence operations.

DIA made significant improvements in Defense intelligence collection capabilities. The consolidation of DoD human intelligence (HUMINT) activities continued under the Defense HUMINT Service (DHS), whose initial operating capability was reached on October 1, 1995. HUMINT support elements were established at all unified commands to improve responsiveness to command requirements. The Agency also operated the Central Measurement and Signature Intelligence (MASINT) Office, which integrated national and DoD efforts to collect the precision data required to effectively develop and employ smart weapons and other advanced warfighting technologies.

DIA focused on high priority, high national interest production topics. The Agency conducted extensive analyses to identify the critical nodes and pathways in communications and data handling infrastructures to support Information Warfare campaign planning and target selection. DIA continued as the Department's lead element in providing warning of the potential terrorist threat to DoD citizens and interests worldwide. In the management arena, DIA established the DoD Intelligence Production Program to make the intelligence production community more efficient and responsive to the needs of all DoD consumers. The Agency is also the lead element for establishing a virtual production environment that will allow electronic linking of production resources, leading to a vast improvement in making timely, tailored intelligence available for operational needs. The Joint Military Intelligence College is working with the Department of Education and Congress to award the degree of Bachelor of Science in Intelligence.

Defense Investigative Service (DIS)

DIS provides personnel security investigations and oversight of defense industry security administration. DIS conducted an estimated 116,000 investigations of military personnel, DoD civilians, and industrial contract personnel during FY 1995 for Top Secret access, and an estimated 420,000 investigations for Secret access and military service entrance. The objective of the personnel security program is to safeguard classified information and deter acts of espionage. Investigations develop information to assist adjudicators in assessing an individual's eligibility for a clearance or a sensitive position.

DIS provides industrial security services to DoD and twenty other federal agencies. The objective of industrial security is ensuring that defense contractor security systems: (1) deter and detect acts of espionage, and (2) counter the threat posed by traditional and nontraditional adversaries who target classified information in industry's hands. The Industrial Security Program (ISP) has shifted from traditional compliance-based industrial security oversight to a customer service approach. DIS works with industry to establish and maintain security systems at over 11,000 contractor facilities, providing rational, threat-appropriate, and cost-effective protection for classified information. A principal focus is providing threat information to assist contractors in resisting foreign intelligence service targeting.

Over the last few years, DIS has undergone major reductions in force while demands for services have remained the same. To meet these demands, DIS has restructured and consolidated organizationally,

reengineered its work processes, and automated the reengineered processes to achieve more cost-effective DoD investigative and industrial security programs. Modernization efforts include deployment of an automated system to collect personnel security data from background investigation subjects and development of a system to process personnel security investigations and industrial security clearances.

Defense Information Systems Agency (DISA)

The force multiplier effect of information systems is 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.

Warfighter information must be integrated seamlessly and passed to the theater and ultimately to the warrior's battlespace. This is the C4I For The Warrior vision, implemented in the Defense Information Infrastructure and the Global Command and Control System. GCCS will embody a network of systems providing the warfighter with the full complement of C4ISR capabilities, while reducing the number of C4ISR systems from 154 to 59. As it matures, the GCCS will form the capstone of the DII.

To make more effective use of its information resources, DoD is launching the Global Combat Support System (GCSS) initiative. GCSS is a joint initiative to facilitate and, where possible, accelerate delivery of improved C4ISR combat support capabilities to the warfighter in the form of DoD-wide combat support systems sponsored by Services and defense agencies. GCSS will deliver an infrastructure allowing the warfighter to have a fused real-time combat support view of the battlespace. This will provide the ability to order, respond, and coordinate vertically and horizontally to the degree necessary to prepare, support, and sustain assigned missions.

The DII provides information processing and value-added services to users over DISN, into which individual service-level networks such as the Marine Corps Data Network are being integrated. DISA integrated the European Theater Transmission Backbone to improve connectivity and interoperability among existing networks. DISA has released to the telecommunications industry requests for proposal for new consolidated DISN service contracts. DISA also awarded the contract for providing Defense Message System (DMS) capabilities this past summer. DMS initial operational capability will be in early 1996. DISA's INFOSEC Incident Support Team, which supports the Department on a round-the-clock basis in protecting DII elements from intrusion, responded to 27,000 assistance requests and resolved nearly 400 attacks against DoD systems in 1995.

Defense Mapping Agency (DMA)

DMA provides the Unified Combatant Commands and Services with global geospatial information and services (GGI&S) for operational missions, safety of flight and navigation, training, and weapon system development. DMA's digital data is used for precision weapons guidance, mission planning and rehearsal, modeling and simulation, and wargaming. DMA also supports military and civilian marine navigation safety with nautical charts, navigation data, and round-the-clock update notices.

DMA is developing the capability to use alternate sources for GGI&S production, such as commercial vendors and foreign national sources, including the former Soviet Union. During crises, DMA supports deployable forces with a wide array of accurate, timely information and products. Leading edge technology deployed in support of Bosnia and Herzegovina operations and Bosnian peace negotiations demonstrates DMA's unique capability to substantially contribute to operational success and preservation of life.

DMA is populating a large global geospatial information data base to provide direct electronic user access to new GGI&S. DMA is also migrating its digital production system to exploit new sensors that will replace its primary data source at the end of the decade, and to sustain productivity with a reduced workforce. DMA will pursue technology to improve advanced targeting system accuracy.

Cooperative accords with over 100 countries augment DMA's internal production, establish DMA products and specifications as de facto standards, and provide access for potential supporters during crises. DMA is updating or establishing agreements with Australia, Japan, Malaysia, Thailand, and South Korea. New initiatives are also underway with Bulgaria, Ukraine, and Russia.

DMA reinvented its operations in 1995 to get closer to its customers, improve readiness and responsiveness, and organize around core business processes. In recognition, the National Performance Review awarded DMA the Vice President's Hammer Award for government reinvention. As a further improvement in managing imagery activities, DMA, CIO, and other agencies will consolidate into a single organization, NIMA, by October1996.

National Reconnaissance Office (NRO)

NRO, a joint DoD and intelligence community organization, provides time-sensitive critical information to policymakers and warfighters. NRO on-orbit reconnaissance systems support U.S. decision makers and warfighters worldwide. Recent examples range from intelligence support for contingency operations such as Deny Flight in the former Republic of Yugoslavia and Provide Promise in Somalia, to support of other government agencies involved in disaster relief and humanitarian missions.

With a firm commitment to strengthening and expanding support to a growing and diverse customer base, NRO has focused on understanding customer requirements and tailoring systems and products to satisfy them. NRO assigns representatives to every CINC to ensure the command's needs are addressed. For selected CINCs, NRO assigns In-Theater Support Representatives who serve on the CINC's staff and provide real-time, two-way communications between the NRO and CINC staffs. They facilitate improved insight into theater requirements, while giving the CINCs broader understanding and expanded access to national assets.

These strengthened relationships have resulted in a number of specific efforts to improve use of NRO products. NRO products provide improved training and education tools tailored to support real-world operations and exercises. NRO trainers deployed for over 950 staff days supporting 90 military elements in FY 1995. Greater integration of NRO systems into military exercises is designed to realistically portray systems and train operators. NRO's exercise support has increased from six exercises in FY 1992 to over 70 in FY 1995, and is projected to exceed 80 in FY 1996. NRO has also expanded its involvement in technology demonstrations and combat integration efforts, such as the Global Broadcast Service employed during the 1995 Joint Warrior Interoperability Demonstrations. This advanced commercially developed technology will enable the military customer to receive video and data at unprecedented rates in diverse locations with small, low-cost, portable receive terminals.

National Security Agency (NSA)

During the past year, NSA personnel supported operations such as Provide Promise and Deny Flight, providing tailored intelligence support through forward representatives and internal crisis response cells. With other intelligence organizations, NSA also participated in deployable National Intelligence Support Teams (NISTs), for which NSA provides the infrastructure. Through NIST, the intelligence community provides warfighters with direct access to intelligence resources and data. Cryptologic support groups of

highly experienced analysts provide dedicated support to the Joint Staff and to some permanently established headquarters and commands.

NSA is developing interoperable satellite broadcasts to deliver fused, actionable, and sanitized graphical intelligence information to users. Today, NSA provides high volumes of critical data to warfighters over existing broadcasts, with limited alternate delivery of graphical fused SIGINT through its Joint Deployable Intelligence Support System user interface. This increases SIGINT utility and impact by delivering it at the time and in the format best suited to meet warfighter needs. To improve tactical system interoperability and application of state-of-the-art technologies, NSA will take a larger role in managing all tactical SIGINT investment programs funded through Tactical Intelligence and Related Activities and the Joint Military Intelligence Program beginning in FY 1996.

NSA provides information systems security leadership, products, and services, as well as technical support to the government's efforts to incorporate INFOSEC into the national information infrastructure. NSA customers include national security community members handling classified and sensitive information, Civil government agencies and, when requested, private sector organizations providing vital national services. NSA assesses the INFOSEC needs of this customer base, delivers INFOSEC solutions, and creates advanced INFOSEC technologies. NSA promotes NII security through work in INFOSEC policy and standards, public INFOSEC advocacy and education, and shaping commercially available security technology.

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^4ISR programs, capabilities, and systems to maximize warfighter benefits in this changing environment. As it downsizes from its late 1980s posture, DoD must attain technological superiority and operational flexibility through a combination of better intelligence, sophisticated C^2, highly motivated and trained C^4ISR personnel, and global defense information access. Within the realities of downsizing and reduced defense spending, the Department has a C^4ISR program in place to meet these requirements.

Chapter 28

DEFENSE BUDGET

INTRODUCTION

President Clinton's FY 1997 defense budget continues implementation of the FY 1996-2001 Future Years Defense Program (FYDP), which is the DoD blueprint for ensuring America's security and sustaining the nation's vital global leadership role. The new budget and FYDP strike a prudent balance between immediate military needs, like high readiness and troop morale, and long-term safeguards, like basic scientific research and selective support for the defense industrial and technological base. Both the budget and FYDP also are consistent with the nation's pressing fiscal pressures.

THE DEFENSE TOPLINE

The President's FY 1997 budget requests spending of $243.4 billion in budget authority and $248.3 billion in outlays for the Department of Defense. In terms of real growth, FY 1997 budget authority is 6.0 percent below the FY 1996 budget. This large a real decline is partially due to the fact that last year Congress added $7 billion to the President's budget request for FY 1996. In FY 1998 and FY 1999, DoD budget authority will rise to keep pace with inflation, then experience a real increase in FY 2000 and FY 2001, primarily because of higher funding for procurement.

Table V-1

Department of Defense Budget Topline ($ in Billions)

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001
BUDGET AUTHORITY						
FY 1997 Topline	251.8	242.6	248.1	254.3	261.7	269.6
Percent Real Growth	-3.7	-6.0	-0.2	0	+0.5	+0.6
OUTLAYS						
FY 1997 Topline	254.3	247.5	243.9	246.5	253.9	256.6
Percent Real Growth	-4.1	-5.1	-3.8	-1.4	+.6	-1.3

In determining funding needed to support the FYDP, individual programs were properly priced based on current estimates of inflation and the latest information on the execution of those programs. The Department also used realistic projections for future program costs and likely savings from reforms and other changes.

Requested FY 1997 DoD budget authority is, in real terms, 40 percent below FY 1985, the peak year for inflation-adjusted defense budget authority since the Korean War. (See Table V-2.)

Table V-2

DoD Budget Authority * (Dollars in Billions)

Growth Year	Current Dollars	Constant Dollars	Real GrowthPercentage
1985	286.8	404.7	--
1986	281.4	387.3	-4.3
1987	279.5	373.2	-3.6
1988	283.8	365.5	-2.1
1989	290.8	360.4	-1.4
1990	293.0	352.7	-2.2
1991	276.2	317.5	-10.0
1992	281.9	318.0	0.2
1993	267.4	292.8	-7.9
1994	251.4	268.8	-8.2
1995	255.7	268.1	-0.3
1996	251.8	258.1	-3.7
1997	242.6	242.6	-6.0
FY 1985-97 real change: -40%			
* Both discretionary and direct spending			

As a share of America's gross domestic product, DoD outlays are expected to fall to 3.2 percent in FY 1997, well below any time since before World War II. (See chart on Defense Outlays as a Share of the Gross Domestic Product.) Other long-term trends for defense spending are detailed in Appendix B. Requested 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 1997 BUDGET

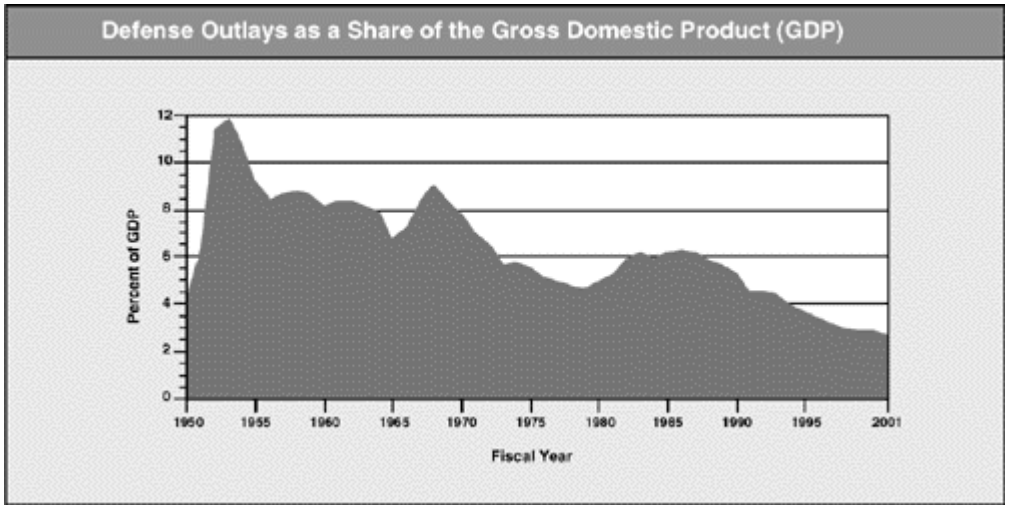
People, Quality of Life, and Readiness

The FYDP and FY 1997 budget 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 (QOL) issues like pay, housing, and medical services. During his tenure, Secretary Perry has placed great emphasis on QOL issues and that is reflected in current defense budget plans. For example, DoD budget plans fund the full military pay raises provided for under law through 2001. It also continues implementing last year's decision by Secretary Perry to substantially boost, through FY 2001, funding and support for construction and maintenance of family and bachelor housing; cost-of-living allowances; child care; family assistance; and morale, welfare, and recreation programs. This boost in support supplements already strong DoD quality of life programs.

A rough measure of DoD support for readiness is funding for its various Operation and Maintenance (O&M) accounts, which pay for training, supplies, maintenance of weapons and equipment, and other preparedness essentials. In real terms, FY 1997 O&M budget authority is only about 19 percent below its FY 1985 Cold War peak. This is less than half the 40 percent decline in overall DoD budget authority for FY 1985-1997. Moreover, the 1996 size of U.S. forces and inventories of equipment and facilities is

roughly 30 percent or more below 1985 levels. Thus, FY 1997 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 for a wide variety of missions, 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, unavoidably hurting the readiness of those forces. The FYDP and FY 1997 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. Therefore, during this or any future FYDP period, when unbudgeted contingencies arise, their costs must be covered -- before they can erode the readiness of U.S. forces.



Force Structure and End Strength

As shown in Table V-3, DoD has virtually finished the BUR-based restructuring of U.S. forces, undertaken to reflect the end of the Cold War and the collapse of the Soviet Union.

Table V-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.

Research and Development (R&D)

The new budget and FYDP support R&D funding and programs that will ensure the future superiority of U.S. forces and weapons. Of particular note, the Science and Technology program, described early in this report, seeks to foster both established technologies as well as longer term ones that promise greater military capabilities and/or reductions in costs. Additionally, the Advanced Concept Technology Demonstration (ACTD) initiative, detailed in Part II of this report, seeks to accelerate the fielding of maturing technologies that are likely to yield high payoffs for U.S. forces.

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. Acquisition reform initiatives are achieving significant cost avoidance, as well as exploring applications of world-class practices to accomplish cost and time reductions in the defense acquisition process. Major reductions are being accomplished through the base realignment and closure process described in the chapter on Installations and Logistics.

Table V-3

Force Structure [a]

	Cold War FY 1990	Base Force Plan [b]	FY 1996	FY 1997	BUR-Based Plan [c]
Army -- active divisions	18	12	10	10	10
Reserve component brigades [d]	57	34	47	42	42
Marine Expeditionary Forcee	3	3	3	3	3
Navy aircraft carriers (active/reserve)	15/1	12/1	11/1	11/1	11/1
Carrier air wings (active/reserve)	13/2	11/2	10/1	10/1	10/1
Battle force ships (active/reserve)	546	430	359	357	346
Fighter wing equivalents (active/reserve)	24/12	15/11	13/8	13/7	13/7

[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] Shown are planned force levels, which may differ slightly from those recommended by the BUR, but which are consistent with its proposals.
[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. One reserve Marine division, wing, and force service support group supports the active structure in all cases.

Table V-4

Department of Defense Personnel (End of Fiscal Year Strength in Thousands)

	FY 1987	FY 1996	FY 1997	Goal	Percent Change FY 1987-1997
Active Military	2,174	1,482	1,457	1,418	-33
Army	781	495	495	475	-37
Navy	587	424	407	394	-31
Marine Corps	199	174	174	174	-13
Air Force	607	388	381	375	-37
Selected Reserves	1,151	931	901	893	-19
DoD Civilians	1,133	841	807	728	-27

Recapitalization of U.S. Forces

For the past five years, the Department has taken advantage of the post-Cold War drawdown of forces to reduce its purchases of new weapons without undermining the battlefield superiority of U.S. forces. As a result, FY 1997 DoD budget authority for procurement is the lowest inflation-adjusted level since 1950. Requested FY 1997 budget authority for procurement is $38.9 billion -- in real terms only about one third the FY 1985 level of $96.8 billion ($134.3 billion in constant 1997 dollars).

In spite of this decline in funding, however, the average age of U.S. military equipment has not increased, because as the forces were drawn down, the older equipment was weeded out. But now that the drawdown in forces is nearly over, DoD's reprieve from equipment aging is nearly over as well.

To ensure military readiness in the long term, the Department must modernize U.S. forces with new systems and upgrades to existing systems in order to maintain America's technological and qualitative superiority on the battlefield. Over the next several years, DoD will begin a recapitalization of U.S. forces which will be critical to the readiness of U.S. forces in the next century. By FY 2001, funding to procure equipment to modernize U.S. forces will increase to $60.1 billion -- in real terms 41 percent higher than the $38.9 billion requested for FY 1997.

The goal of DoD's modernization/recapitalization plan is to ensure a ready, flexible, and technologically superior force for a changing security environment. Numerous programs will help preserve America's battlefield dominance by exploiting information-age technology such as advanced sensors, computers, and communications.

The DoD modernization plan reflects several priorities:

- Precision-guided bombs and other crucial enhancements for long-range bombers (B-1, B-2, B-52H), plus other advanced munitions, especially ones for defeating enemy tanks.
- Surveillance systems such as Joint Surveillance Target Attack Radar System (JSTARS), new unmanned aerial vehicles, and Spaced-Based Infrared Systems.
- For several tactical missile systems, improvements to achieve greater accuracy and lethality, e.g., the Longbow Hellfire II missile upgrade for Apache helicopters and an enhanced Tomahawk cruise missile.
- Airlift, most notably the C-17 -- now performing superbly in and around Bosnia and Herzegovina.
- Sealift and afloat prepositioning, especially large medium-speed roll-on/roll-off ships.
- Theater missile defense through new systems like the Patriot Advanced Capability-3 and Theater High-Altitude Area Defense (THAAD) systems.
- Everyday equipment needed by ground forces, such as tactical communications gear, trucks, and upgraded tanks and infantry fighting vehicles.

DoD modernization plans call for other new systems as well, including: the Comanche armed reconnaissance helicopter, F-22 and F/A-18E/F fighter/attack aircraft, the Joint Strike Fighter, V-22 Osprey, LPD-17 Amphibious Transport Dock ship, DDG-51 guided-missile destroyers, and new attack submarine.

For these DoD modernization programs to be fulfilled, the President's defense topline for FY 1998-2001 must be approved by Congress. (For these years the President's defense budget keeps ahead of inflation and enables increased procurement funding.) The Department also must achieve its projected savings from infrastructure reductions, most importantly base closings, and from acquisition reform.

Furthermore, it is critical that appropriated funds for procurement get allocated as planned in DoD's Future Years Defense Program. In other words, achieving the Department's modernization goals depends on Congress' supporting the specific spending allocation in DoD development and procurement plans and refraining from the diversion of funds to unrequested uses.

The Department of Defense modernization/recapitalization plan is the result of intense assessments by many highly experienced defense leaders. They have produced a balanced, prudent plan to ensure the long-term readiness of U.S. forces well into the 21st century.

Further details on DoD's modernization/recapitalization plans are included throughout this Annual Report:

- Chapter 3, Critical Force Enhancements, highlights modernization plans that are especially needed to support America's National Security Strategy.
- Each chapter in Part IV, Defense Components, details the programs, timetables, and funding that constitute DoD's total recapitalization/modernization plan.
- The Part VI statutory reports of the Service Secretaries provide their perspectives on recapitalization for their respective Services.

DEFENSE BUDGET ISSUES

Readiness and Contingency Operations Costs

The FY 1997 budget includes funds for the contingency operations that the Department knows will carry over into the coming fiscal year. Congress has indicated that this is the approach it will support and that bodes well for protecting force readiness while pursuing contingency operations. If Congress approves these funds, and no unexpected new costs are encountered, then DoD's O&M accounts will not have to be drawn down, thereby hurting readiness.

Regarding costs for contingency operations during this current fiscal year of 1996, Congress funded the Southwest Asia portion of DoD's costs when it added money to last year's President's budget. The Department's remaining unfunded requirements total $2.1 billion, almost all of it for operations to support the peace agreement in Bosnia and Herzegovina. Nearly half this total can come from a reprogramming of savings from lower-than-expected inflation. Another $620 million is included in a supplemental appropriations request. These two proposals were submitted to Congress early in calendar year 1996, with Secretary Perry's recommendation that they be approved as expeditiously as possible. The Department must know how these contingency costs will be financed. Otherwise, DoD leaders will have to move to curtail training and take other measures to divert O&M funds to cover contingency operations bills.

Unrequested Spending

Each year Congress includes substantial spending in the defense budget that was not requested by the President, and this invariably drains money from expenditures that would better enhance the nation's security. Sometimes the additions are for weapons or other uses included in the FYDP, but not planned for inclusion until some time after the budget year. In these cases, the issue is the timing of the expenditures -- not whether the spending is needed. But when the additions are for non-FYDP uses, there is a more clear-cut diversion of funds from the spending requirements determined during the Department's rigorous program and budget review. Unrequested spending is especially damaging when it fails to take account of the future spending that it will generate.

CONCLUSION

Events since the end of the Cold War have demonstrated the need for America to retain a strong global leadership role and a prudent defense posture. President Clinton's FY 1997 defense budget, and the strategy and plans on which it is based, support that need while remaining fiscally responsible.

REPORT OF THE SECRETARY OF THE ARMY

The Army has served the nation for over two centuries. Our Army is truly America's Army -- a seamless force composed of Active Duty, Reserve, and National Guard soldiers, civilian employees, and family members serving the nation at home and abroad. We have an obligation to give them the best leadership, weapons, technology, and quality of life possible.

Committing the Army commits the nation. No other single gesture so readily demonstrates U.S. resolve as placing American soldiers on the ground. The Army is evolving to satisfy increased demands and will remain vigilant in preserving those attributes that make it a uniquely American institution. As we prepare to enter a new century, the Army will continue to change, to grow, to preserve the best of its past, and to serve the nation.

THE WORLD TODAY

Ethnic, religious, territorial, and economic tensions, held in check by the pressures of bipolar global competition, erupted when Cold War constraints dissolved. The world has entered a period of radical and often violent change. American leadership is essential to assist a troubled world while capitalizing on its opportunities. Focusing on today's threats and opportunities, our National Security Strategy is one of engagement and enlargement. Its goals are to enhance our security, to bolster our economy, and to promote democracy. Our engagement is selective, focusing on U.S. interests and our ability to make a difference. The nation's military capabilities are essential to executing this strategy. The National Military Strategy, in supporting the National Security Strategy, calls for flexible and selective engagement. Its objectives are to promote stability and thwart aggression. As the nation's land force and the strategic core of joint military operations, the Army is a critical player in the National Military Strategy.

THE ARMY'S ROLES: SERVICE TO NATION

America's Army serves the nation every day in numerous ways, with high quality soldiers and civilian employees working effectively at home and abroad. The Army's fundamental purpose is to fight and win the nation's wars. The Army also executes a variety of dangerous missions around the world and assists on the homefront. These endeavors require the same well trained, disciplined soldiers that the nation relies upon for combat. When the nation calls -- and it has more and more frequently -- the Army is ready.

The Army is the ultimate symbol of American will. It is an indispensable component of the National Security Strategy, and it is essential to deterring or defeating any adversary. An American soldier on the ground demonstrates our nation's determination to prevail in any situation.

Wars are won on the ground. Only the Army has the assets and staying power to operate over an entire battlefield and bring a conflict to a successful conclusion, against any opponent in any region of the world. Successful military operations require control of the air, sea, and land, but America's ability to impose its will ultimately depends on its ability to control the land through prompt and sustained land-combat operations. The application of military force on land is an action no opponent can ignore. The Army, with its ability to provide long-term presence, effects lasting change.

The Army also plays an essential role in joint warfighting while readily acknowledging the contributions of our sister Services. As the joint force provider of land combat and sustainment forces, the Army is dedicated to enhancing its capabilities to operate in a joint environment. Future success will undoubtedly require the complementary capabilities of all the Services. Our training and doctrine reflect this reality.

America's Army, fully integrated with the Air Force, Navy, and Marines, will dominate any enemy in war and successfully execute other military operations.

The Army is designed to compel, deter, reassure, and support. When all else fails, the Army compels adversaries to yield to our nation's will, as evidenced by recent operations in Panama and Kuwait. The Army deters others from actions inimical to our interests by maintaining a trained and ready force, as demonstrated by our long-standing presence in Europe and Korea. The Army reassures friends and allies: we are a visible symbol of U.S. commitment to stand firm against any external threat to their sovereignty, as demonstrated in Kuwait, the Sinai, Former Yugoslav Republic of Macedonia, and many other places around the world.

Finally, the Army supports communities within the United States. For decades, the Army has provided military support to civil authorities during natural disasters and civil disturbances. In the recent past, American soldiers have assisted local authorities in fighting fires in the Pacific Northwest; aided flood victims in the South and Midwest; provided relief supplies, logistical support, a hospital, and other equipment in the aftermath of Hurricane Marilyn; contributed substantially to the counterdrug activities of federal, state, and local drug law enforcement agencies; and provided health care to underserved populations in the United States through the National Guard's Operation Guard Care.

The Army also contributes substantially to international conflict prevention by controlling the proliferation of weapons of mass destruction, strengthening military relationships with other nations, and maintaining a forward presence overseas. For example, as part of the Nunn-Lugar Cooperative Threat Reduction Program to control the proliferation of weapons of mass destruction, the U.S. Army Corps of Engineers will assist in the design and construction of a fissile material storage facility in Russia.

The Army strengthens military relationships with other nations by building security ties with new friends and by strengthening relations with long-standing allies. Our military-to-military contact programs with new partners in Europe, the former Soviet republics, and nations in our own hemisphere are important pieces of this effort. For example, the National Guard, through its State Partnership Program, recently participated in the first ever combined engineering exercise in Eastern Europe.

Finally, the Army is committed to maintaining an overseas presence. We maintain 113,000 soldiers forward-stationed in Europe and the Pacific. At the same time, on any given day, over 21,500 soldiers are deployed from their home stations to countries around the world. In the last year, American soldiers have upheld democracy in Haiti; responded to another threat to regional stability in Southwest Asia; delivered relief supplies to Rwandan refugees; reinforced peace in the Sinai Peninsula; supported refugees in the Caribbean, Panama, and the Pacific; treated wounded in Croatia; demonstrated resolve in the Former Yugoslav Republic of Macedonia; deterred aggression in Korea; helped keep the peace between Peru and Ecuador; and began keeping the peace in Bosnia and Herzegovina.

THE ARMY TODAY

While the National Military Strategy evolves with the changing international security environment, the responsibility to provide the nation with a ready Army remains constant. To maintain readiness, we must ensure the force is recruited, trained, equipped, and sustained.

Recruit the Force

The Army continues to have great success in attracting and retaining high quality recruits. We are meeting our recruiting goals, in terms of both quantity and quality. One of our goals is to have at least 95

percent of enlistees possess high school diplomas. Last year, we met or exceeded that mark in both the active Army and the Army Reserve.

We must continue to provide adequate resources for both the Active and Reserve Component recruiting missions because, although the Army achieved its enlistment goals in 1995, problems may arise. Surveys show a 39 percent drop from 1989 to 1994 in young people's propensity to enlist in the armed forces; and, beginning in FY 1997, the Army must again replace losses on a one-for-one basis, having completed the drawdown. We have already added 350 active Army recruiters to the force and are adding another 250. We also will maintain bonuses and educational benefits. These initiatives, coupled with a professional recruiting organization, continue to ensure that the Army of today, as well as the Army of the future, is manned with high quality personnel.

Train the Force

Training binds the Army into a force capable of success in any endeavor. Training ensures soldiers, leaders, and units are prepared to fight and win. Well trained and led, high quality soldiers have proven capable of adapting to any situation, against any opponent, anywhere in the world. Only by remaining well trained can America's Army expect to deliver decisive victory. The Army has one standard: tough, realistic, mission-focused training which prepares soldiers and units for a wide variety of operations. This training will remain our top priority.

The Army's system of individual training and professional development remains a model for other nations' armies. Our system for training units is equally strong, with an emphasis on deployments to the combat training centers and major joint and combined exercises.

Our training system is key to redesigning the Army's operational forces for the 21st century. Through the battle labs program and advanced warfighting experiments, we are testing and refining the components of success on the battlefield: doctrine, training, leader development, organization, materiel, and soldier systems. The Army of the 21st century will be designed and built based on lessons learned from the battle labs and warfighting experiments.

Equip the Force

American soldiers are the best equipped in the world. The Army's challenge is to maintain that status. Modernization is essential as America's Army prepares to enter a new century. Today's smaller Army requires increased lethality, and obsolete equipment must be replaced. The Army's modernization plan, science and technology master plan, strategic logistics plan, and enterprise strategy describe the future force's overall characteristics and define its parameters, critical capabilities, key technologies, and advanced operational concepts. The Army's modernization objectives -- project and sustain the force, protect the force, win the information war, conduct precision strikes, and dominate the maneuver battle -- serve to focus modernization efforts.

The Army must fundamentally change its modernization strategy. Although the Army's operational pace is greater than at any time since World War II, the dollars on which the Army depends have steadily decreased in real terms. From FY 1989 to FY 1995, the Army's total obligation authority declined over 31 percent. This decline in Army resources is one of our toughest challenges. We will continue to search for ways to overcome our modernization shortfalls.

Scarce modernization dollars require the Army to buy a limited number of new weapons -- such as the Comanche armed reconnaissance helicopter and the Crusader field artillery system -- while we extend the

lives and improve the capabilities of our existing systems. Limited modernization resources preclude large investments at this time. Upgrading proven weapons by adding information technology will increase capabilities and utilization, but the Army will eventually reach the point where additional technological improvements of today's systems will provide only marginal benefits. We have begun -- in the outyears of the Future Years Defense Program -- to program the resources to support this modernization, which is necessary to maintain the technological edge for us to dominate the battlefield.

Sustain the Force

The Army sustains the force with the best logistics system in the world. Logistics cannot win a war, but its absence can certainly lose one. Logistics support, an overarching function, was extensive and crucial to recent operations in Somalia, Rwanda, Haiti, and Southwest Asia. Additionally, logisticians are continuing to redistribute excess equipment and repair parts generated from unit deactivations and base closures. The Army's strategic logistics plan synchronizes our logistics operations and defines the Army's future logistics system -- a technologically advanced, seamless system which will provide world-class support during peace or war.

The quality of life of our soldiers, civilian employees, and family members also is an integral part of sustaining the force. It is vitally important to their commitment and to Army readiness. In order to continue attracting and retaining high quality people, we must offer and provide a decent quality of life. We are committed to ensuring our soldiers receive adequate pay, retirement benefits, health care, housing, family support, commissaries, and the prospect of a full and rewarding career. Housing is an important example of our commitment to sustaining a decent quality of life: the Army has increased funding for family housing, and this year we will begin to tackle the backlog of maintenance and repair, with the revitalization or replacement of more than 350 family units and the modernization of 3,000 barracks spaces. We also are working to remedy those issues unique to Reserve Component soldiers and Army civilians employees who we call on to deploy with the force.

THE FUTURE: INTO THE 21ST CENTURY

The next century holds unprecedented challenges and opportunities for the United States and its military forces. As the world leaves behind the industrial age and enters the information age, warfare will change. In the past five years, the Army has accomplished much towards building a 21st century force, and challenges remain. The Army fully intends to be the world's most formidable land force in the next century: we will integrate emerging information technologies with sound doctrine, reinvented organizations, and high quality people to make the smaller force more lethal, more survivable, and more powerful.

The Army is reviewing its organization to ensure it fully integrates talented soldiers with state-of-the-art technology. The design, organization, and capabilities of battalions, brigades, divisions, and corps may be changed fundamentally as their capabilities are enhanced. The future force also will be ideally suited for joint operations. Its technology will be fully compatible with the systems of other services and it will be designed to allow the generation, projection, and sustainment of force packages tailored to the specific needs of a joint force commander.

Decisive victory in the 21st century will be achieved by dominating the enemy in speed, space and time. Competitive advantage will derive from the quantity, quality and use of information. Emerging information and digital technologies will create a synergistic effect among weapons, organizations and components, significantly enhancing the Army's capabilities. The future Army will maximize its use of modern computer technology, the integration of doctrine and organization, and the skills of the Army's

high quality people. The goal is to create new formations that operate at even greater performance levels. To ensure decisive victory, America's Army must experiment with innovative concepts and new technologies.

Equally important to forging the 21st century force is the fundamental redesign of our institutional Army. We will reduce the number of Major Army Commands, divest the Army of those functions which are not absolutely essential, and reallocate resources to support our core capabilities. We are conducting comprehensive reviews of all our headquarters field operating and staff support agencies. We expect to reduce significantly the number of headquarters agencies, and we will explore every opportunity to privatize or outsource a number of administrative support functions. In support of the redesign effort, we have initiated some ancillary reviews to identify cost-saving initiatives across the Army. In particular, our acquisition and modernization initiatives will increase efficiency and effectiveness as the Army prepares to enter the 21st century.

CONCLUSION

America's Army has changed significantly in the past five years -- in the way it thinks, the way it operates, and the way it conducts business. Although smaller, our Army is more capable and remains the world's premier land combat force. It is a technologically enhanced force composed of outstanding soldiers and civilian employees, ready to meet the challenges of an uncertain world. The Army proudly serves the nation at home and abroad, forms the strategic core of joint operations, and is at the forefront of building a 21st century force. As it has for over two centuries, the Army stands ready to answer the nation's call.

/s/

Togo D. West, Jr.
Secretary of the Army

REPORT OF THE SECRETARY OF THE NAVY

FORWARD, READY, AND ENGAGED TODAY

The events of the past year demonstrate the continuing relevance and importance of the Department of the Navy's primary task -- providing the nation combat-ready, sea-based, forward-deployed, and forward-engaged naval forces. Our success in meeting today's operational challenges can be attributed to thorough planning and innovative execution. Three years ago the Navy-Marine Corps Team introduced a new strategic vision, . . . *From the Sea*, followed immediately by organizational and process changes to foster innovation and streamline communications. In 1994, *Forward . . . From the Sea* updated and expanded our strategic concept to specifically address the unique contributions of naval expeditionary forces in peacetime operations, in responding to crises, and in regional conflicts. This common strategic concept and common doctrinal foundation between our two Services is unique within the Defense establishment.

Throughout the past year, we continued to build upon the proven success of this concept, further solidifying the Navy-Marine Corps Team's role as the response of choice during times of international crisis. From USS Normandy's quick reaction Tomahawk strike against Bosnian-Serb aggression to the expeditious recovery of Captain Scott O'Grady by the 24th Marine Expeditionary Unit (Special Operations Capable), naval forces fulfilled a vital operational role by capitalizing on our unique core capabilities -- forward presence, expeditionary readiness, and on-scene power projection from the sea.

Each Service plays an important role in support of the *National Security Strategy of Engagement and Enlargement*. The Navy-Marine Corps team complements the other Services as part of an overall joint strategy. Within that strategy, naval forces provide the capability to position credible combat power overseas without the consent or imposed limitations of foreign governments, while providing the enabling force for larger operations utilizing joint forces if required.

We continued to focus on improving the quality of life of our Sailors and Marines, caring for them in a manner consistent with their role as the first line of defense for the nation's freedoms. We have promoted core values of honor, courage, and commitment to develop better leaders and more effective Sailors and Marines. Concurrently, we have focused plans for acquisition and modernization to ensure our equipment is on the same level of excellence as our people. In all areas, the Navy-Marine Corps Team is forward deployed, combat ready, and engaged to protect U.S. interests, reassure friends, foster stability, control crises, and prevent conflict. We are truly the right mix, in the right place, right now.

PREPARING FOR TOMORROW

The Department of the Navy (DoN) is committed to ensuring that naval forces can continue to immediately respond to national security tasking, when and wherever required. We understand that the responsive, adaptable, and combat credible naval expeditionary forces of tomorrow depend upon the correct programmatic and acquisition decisions of today. To achieve that end, we are addressing tomorrow's challenges in a variety of ways, including closer Navy and Marine Corps coordination and the reengineering of our acquisition process. These two efforts in particular have benefited from work already accomplished in support of the congressionally mandated Commission on the Roles and Missions of the Armed Forces and the Federal Acquisition Streamlining Act.

Our intensified efforts in Navy-Marine Corps integration include closer coordination of the Services' requirements determination and programming processes, more detailed operational integration, and movement of Marine Corps headquarters to the Pentagon.

THE STRATEGIC IMPERATIVE

With vital economic and security interests dispersed around the globe, the United States is, and will remain, a maritime nation. Accordingly, our strategy, as reflected in the National Security Strategy and National Military Strategy, is necessarily a transoceanic one.

Our vital interests -- those interests for which the United States is willing to fight -- are at the endpoints of highways of the seas or lines of strategic approach. These endpoints lie in the world's littoral regions which coincide with the concentration of our vital interests in Europe, Asia, the Middle East, and Latin America. While representing only a small portion of the world's surface, littorals provide homes to over three-quarters of the world's population, locations for over 80 percent of the world's capital cities, and nearly all the major marketplaces for international trade.

It is in the littorals where naval expeditionary forces regularly influence events ashore from sovereign fighting bases at sea operating in the Pacific, Indian, and Atlantic Oceans and Mediterranean Sea, the Red Sea and Persian Gulf, the Caribbean Sea and, most recently, the Baltic and Black Seas. As a concrete demonstration of national interest and intent in an era of declining permanent U.S. presence overseas (over 850 overseas bases closed or reduced in the last four years), combat credible naval forces exert real influence and assurance because real, on-scene power still counts.

FORWARD PRESENCE

Naval forces are built to fight and win wars. But an equally important role is to be positioned forward to prevent conflict. On any given day, 40-50 percent of the fleet is underway. Half of those units and over 23,000 Marines are deployed overseas, taking part in a broad spectrum of military operations. These forward naval forces provide:

- Deterrence of aggression.
- Enhancement of regional stability, including countering the proliferation of weapons of mass destruction.
- Protection and promotion of U.S. interests.
- Improvement of interoperability with key allies.
- Readiness to provide a timely initial crisis response.

In cooperation with our friends and allies, naval forces are deployed near potential flashpoints to prevent the emergence of dangers to shared interests. Partnership is developed and enhanced when we promote interoperability at the operational and tactical levels with the naval, air, and ground forces of the most likely coalition partners. Exercises that reassure friends and build coalitions are the stock-in-trade of Navy and Marine Corps units.

This year, as in years past, U.S. naval forces participated in exercises with military forces from over 69 nations. For example, one of our deployed Amphibious Ready Groups/Marine Expeditionary Units in the Mediterranean conducted the largest exercise in Albania and the largest amphibious bilateral exercise to date in the Black Sea.

A driving consideration in the case for forward-deployed naval forces is the demand from those responsible for promoting U.S. foreign policy. Naval forces were used as diplomatic instruments on numerous occasions this year due, in part, to their ability to be unencumbered by host nation restrictions. Naval forces are often the force of choice to respond to crises because of their mobility, self-sustainability, and responsiveness.

EXPEDITIONARY READINESS AND CRISIS RESPONSE

The term expeditionary captures the essence of U.S. national security strategy over the last century -- countering military threats overseas rather than on American shores. The Navy-Marine Corps Team provides the nation a fully integrated air, land, and sea combined arms force founded on expeditionary readiness, designed and employed to immediately confront threats at their source. But what are expeditionary forces? They are Navy and Marine Corps operational forces uniquely positioned and organized to accomplish a wide range of missions including long-range strike operations and early forcible entry to facilitate or enable the arrival of follow-on forces. Power projection is just one of the options available to a naval expeditionary force. These forces have the ability to go rapidly and easily where there is no infrastructure and operate upon arrival. They can do this because they carry their infrastructure on their backs and in the holds of ships. Naval expeditionary forces are tailored economical force packages that can accomplish the mission without having to wait for additional assets or personnel. These forces are self-reliant, self-sustaining, and adept in the most austere environments. They are comfortable with uncertainty and capable of handling adversity. Host nation support is nice to have, but as Navy and Marine Corps units demonstrated in Somalia and Bosnia and Herzegovina, they can operate effectively without it.

Naval expeditionary forces are operationally flexible, imbued with the capability and mobility to quickly transit to new regions and immediately respond to new threats or missions. This unique operational readiness and adaptability was dramatically demonstrated during last year's naval operations, particularly in responding to crises. While supporting operations in Bosnia in June 1995, the 24th Marine Expeditionary Unit (Special Operations Capable) and Amphibious Squadron 8 rescued downed U.S. F-16 pilot, Captain Scott O'Grady.

On August 4, 1995, the aircraft carrier USS Theodore Roosevelt, positioned in the Adriatic Sea with Navy and Marine Corps squadrons onboard, launched air strikes which destroyed Bosnian Serb antiaircraft missile sites. On August 6, this force quickly transited to a position off the coast of Israel in response to reports of unusual Iraqi troop movements and a possible attack on Jordan. On August 28, with tensions in the Middle East subsiding, the carrier was ordered to change course again and, within 31 hours, traveled over 900 miles back to the Adriatic Sea to launch retaliatory strikes in response to the Bosnian-Serb mortar attack of a Sarajevo marketplace. Shortly after, the USS America CVBG arrived in theater, relieved the USS Theodore Roosevelt CVBG on station and, within 24 hours, also conducted strike operations against Bosnian-Serb forces. These demonstrations of naval power projection were instrumental in bringing the warring factions back to the negotiating table.

Put simply, the readiness, adaptability, self-sustainability, and mobility of naval expeditionary forces make them powerful and compelling instruments in support of national policies. Table VI-1 shows the important role naval expeditionary forces have played in support of U.S. national interests over the last year.

TOTAL FORCE INTEGRATION

The enhanced combat power produced by the integration of all supporting arms, which we seek to attain through joint operations, is inherent in naval expeditionary forces. The Navy and Marine Corps are developing innovative ways to enhance joint warfighting capabilities by capitalizing on technology and the unique flexibility and expeditionary character of naval forces. Accordingly, we have initiated changes in training, procurement, organization, and funding priorities to strengthen joint warfighting effectiveness.

C^4I For The Warrior is the JCS conceptual roadmap for achieving global joint command, control, communications, computers, and intelligence (C^4I) interoperability. In the 21st century, naval forces will achieve *C^4I For The Warrior* through implementation of Copernicus. Designed as a user-centered C^4I information management architecture, Copernicus provides a blueprint for capturing technological change. Copernicus articulates the true sense of modern command and control (C^2). It is the foundation for joint and allied operations. The Navy and Marine Corps continue to ensure this architecture remains a viable, evolving construct that fully supports the warfighter while adapting to new technologies and requirements. As a result of fielded systems that support the Copernicus architecture, the goal of true joint and allied interoperability upon arrival is becoming a reality.

Table VI-1

1995 U.S. Navy/Marine Corps Operations

Date	Operation	Forces	Location
Aug 90 - Present	Arabian Gulf Maritime Interception Operations	EISENHOWER, ROOSEVELT, INDEPENDENCE, CONSTELLATION, LINCOLN CVBGs	Arabian Gulf
Jul 92 - Present	PROVIDE PROMISE (Humanitarian Operations)	EISENHOWER, AMERICA,ROOSEVELT CVBGs; NASSAU, KEARSARGE, WASP ARGs; 22nd, 24th, and 26th MEU(SOC)s	Bosnia and Herzegovina
Aug 92 - Present	SOUTHERN WATCH (Enforcement of No-Fly Zone)	EISENHOWER, INDEPENDENCE, KITTY HAWK, ROOSEVELT, CONSTELLATION, LINCOLN CVBGs; 3rd MAW Units	Iraq
Apr 93 - Present	DENY FLIGHT (Enforcement of No-Fly Zone)	EISENHOWER, AMERICA, ROOSEVELT CVBGs; 2nd MAW; NASSAU, KEARSARGE, WASP ARGs; 22nd, 24th, and 26th MEU(SOC)s	Bosnia and Herzegovina
Jun 93 - Present	SHARP GUARD (Enforcement of UN Sanctions)	EISENHOWER, AMERICA, ROOSEVELT CVBGs; NASSAU, KEARSARGE, WASP ARGs; 22nd, 24th, and 26th MEU(SOC)s	Adriatic Sea
Jun 94 - Present	SEA SIGNAL (Migrant Operations)	II MEF Units	Cuba
Nov 94 - Mar 95	MAINTAIN/UPHOLD DEMOCRACY (Support of UN Mission)	EISENHOWER, AMERICA CVBGs; INCHON ARG/II MEF Units	Haiti
Jan 95	KOBE EARTHQUAKE (Humanitarian Operations)	III MEF Units	Japan
Jan 95 - Feb 95	SAFE PASSAGE (Migrant Operations)	II MEF Units	Caribbean Sea
Feb 95 - Mar 95	UNITED SHIELD (Withdrawal of UNOSOM Forces)	I/II MEF Units, ESSEX ARG; CG I MEF/CJTF; 13th MEU(SOC)	Somalia
Mar 95 - Apr 95	FULL ACCOUNTING (Accounting of POWs/MIAs)	1st MAW Units	SE Asia
Jun 95 - Aug 95	QUICK LIFT (Supply Rapid Reaction Force)	Military Sealift Command	Bosnia and Herzegovina
Aug 95 - Present	VIGILANT SENTINEL (Response to Iraqi Threats)	EISENHOWER, AMERICA, INDEPENDENCE, ROOSEVELT CVBGs; NEW ORLEANS ARG; 11th MEU(SOC); I MEF Units, MPS-2	Arabian Gulf/East Mediterranean Sea
Aug 95 - Sep 95	DELIBERATE FORCE (Enforcement of Exclusion Zone)	ROOSEVELT, AMERICA CVBGs; 2nd MAW CV and Land-based Units	Bosnia and Herzegovina
Dec 95 - Present	JOINT ENDEAVOR (Enforcement of Dayton Accord)	European Command's ARG/MEU(SOC), Naval Construction Battalion, Marine Corps Security Forces	Bosnia and Herzegovina
Continuous	Counterdrug Operations	Navy/Marine Corps Active/Reserve Air, Surface, and Ground Units	Caribbean Sea, SW U.S. Border

As naval forces are reduced in numbers without a corresponding reduction in missions, reservists assume increasing importance. Employment of the Total Force -- Active and Reserve -- is imperative. Naval reserve forces provide critical capabilities and augmentation and are undergoing changes that will make them even more responsive. New initiatives include full integration of modern mission hardware and increased reserve involvement in mine warfare, counterdrug operations, and waterfront support. Marine Corps reserve initiatives have been implemented to enhance Active-Reserve integration. The initials *USMCR* have been removed from unit signs and letterheads to emphasize the reality of one Marine Corps. The Commandant has also redesignated the Atlantic and Pacific Reserve Marine Air-Ground Task Force (MAGTF) Command Elements (CE) as Marine Expeditionary Force (I and II MEF) Augmentation Command Elements to clearly signify their MEF operational relationship.

PEOPLE

The heart of the Department of the Navy's readiness is our people -- a total force of Sailors and Marines, both Active and Reserve, and civilians -- who kept faith with the Navy and Marine Corps through the drawdown and now look to the future, to the Naval Services of the 21st century. These men and women are serving today all around the globe, forward-deployed and ready to carry out any assigned mission. Operating the most technologically advanced equipment of any force in the world, they must be ready 365 days a year. Maintaining highly motivated and trained Sailors and Marines during these challenging times requires innovative leadership, diligent planning, and careful management of resources.

Our primary challenge is attracting and retaining high quality people. Over the past year, Navy and Marine Corps Recruiting Commands continued to battle one of the toughest recruiting environments in the history of the all-volunteer force. The market of recruitable young people 17-21 years old is one of the smallest and the propensity to enlist is low. Similar challenges exist in the Department's civilian cadre. We must attract the most talented new people while retaining the services of our senior civilians.

In 1995, our recruiting forces met the challenge. We continue to increase the resources available to our recruiters as we look ahead to 1996 and the task of bringing almost 60,000 new Sailors and 40,000 new Marines into our Services.

Achieving diversity within the Department remains an overarching goal. Gender barriers continue to be eliminated. We welcome all potential contributors to our team. To ensure the Naval Services reflect the society we serve by the year 2000, our goal is to recruit and train a force that includes 12 percent African-Americans, 12 percent Hispanics, and 5 percent Asian-Pacific Islanders.

Several classes of combatant ships, from Aegis destroyers to nuclear-powered aircraft carriers, have already embarked women Sailors, and more will follow. Ninety-seven percent of all career fields are now open to women in the Navy. In the Marine Corps, women may now be assigned to all units except infantry regiments, artillery battalions, and separate ground combat battalions (Combat Engineer, Tank, Reconnaissance). Our policies and programs reflect the Department's absolute commitment to creating an environment in which every member of our team has equal access to training, to challenging work, to all the things that lead to success.

There are a number of initiatives underway that will have a major impact on retention. Enhancing quality of life and improving advancement opportunity are crucial to our efforts. Competitive pay and benefits continue to be important. The Selective Reenlistment Bonus (SRB) is the most effective program for short-term retention of highly skilled enlisted personnel. Protecting retirement benefits is vital for long-term retention of our career personnel.

We have proposed legislative initiatives to authorize quarters allowances for single E-5s on sea duty. Additional proposals support payment of BAQ/VHA allowances to single E-6s and above who are ordered by a permanent change of station to deployed units, as well as to joint military couples who are without dependents and are assigned to sea duty.

Our quality of life programs and resources are targeted equitably to ensure all of our personnel have an acceptable baseline of services available to them. We are particularly interested in supporting the families of our Sailors and Marines. Family Service Centers encompass a variety of important programs including relocation and transition assistance, deployment support, personal financial management, and efforts to prevent family violence. The Navy and Marine Corps have established a New Parent Program designed to help our younger Sailors and Marines with their family responsibilities. Effective quality of life programs have a very positive impact on our recruiting and retention efforts and, ultimately, readiness.

The past six years have been a period of dramatic change. The Department remains focused on what we must do to be fully ready to operate *Forward . . . From the Sea* in the years ahead. The Naval Services are continuing to build a strong team of Sailors, Marines, and civilians committed to the highest standards of character and ethical behavior. We will take care of this team and their families. We will treat them with respect and dignity in a professional environment which fosters excellence and encourages success in order to guarantee a ready force, today, and in the future.

READINESS

Navy and Marine Corps readiness today is high but there remains a concern for the future. Readiness is key to forward presence, crisis response, war prevention, and winning wars. It remains our priority. A smaller force structure demands that we maintain technological superiority over potential adversaries. Retaining that superiority means recruiting and retaining quality people, as well as providing them with the finest equipment possible. We must make the right decisions now to support both current and future readiness.

Navy and Marine Corps units require the least amount of supplemental contingency funds because regularly scheduled forward deployments are already funded. However, our operating budget leaves little room to support unfunded contingencies that require deployment of additional ships, squadrons, and Marines. Unplanned deployments often cause us to draw down other accounts, which if unreplenished ultimately impacts current readiness. The Navy and Marine Corps, Active and Reserve, Operations and Maintenance (O&M) appropriations bear the burden of supporting these unfunded contingencies. Diverting programmed O&M funds disrupts quality training while delaying vital equipment repairs and the acquisition of new platforms and weapon systems. As long as we receive additional funding in a timely manner, the impact on readiness from diverting programmed funds will be minimized.

Future readiness is facilitated by correctly sizing the force. Too small of a force places too many operational demands on people and equipment, wearing them down to a level that puts readiness at risk. As downsizing slows and force structure stabilizes, maintaining the readiness to support national security interests requires close scrutiny.

Heavy demands on forces this year indicate that previously programmed force levels require adjustment to meet the tempo of operations actually being experienced. We need to make these adjustments in order to avoid excessive impact on people, equipment, and eventually readiness. We are paying particularly close attention to our surface and amphibious forces.

Readiness is ultimately the foundation for maintaining the credibility of our forces as instruments of foreign policy and national resolve. Today, our naval forces are forward deployed and ready to go in harm's way to defend U.S. interests.

INNOVATION AND MODERNIZATION

Events of the past year clearly demonstrate that we live in an uncertain world that requires naval forces to meet a wide range of contingencies. Through a combination of innovation and modernization, we will build and maintain naval forces that are ready to meet those contingencies. Where it makes economical and operational sense to do so, current platforms and weapon systems will be modernized. We will also take advantage of the explosive changes occurring in high technology to conceive and build new and more capable platforms and weapon systems for the future.

The Department is investing today in the platforms, equipment, and infrastructure required for future naval forces. Our acquisition investment strategy is to maintain a smaller but more technologically advanced force commensurate with current and future required capabilities. This strategy maximizes scarce procurement dollars without compromising quality.

Our near-term investment strategy involves prudent risks. Many of the current platforms and weapon systems were procured during the 1980s and 1990s. Lower post-Cold War force level requirements allow retirement of older and less capable platforms and weapon systems. The net effect is that the average age of our platforms is actually lower than in the past when annual procurement budgets were much higher. However, based upon current production rates, average age will steadily increase. Current programs such as DDG-51, MV-22, F/A-18E/F, and AAAV will help to ameliorate this effect and are critical parts of Navy and Marine Corps future readiness. To support long-term modernization and acquisition, we plan to increase procurement accounts. Resources for this must come from four areas: first, cost avoidances from acquisition reform; second, execution of BRAC and infrastructure reduction decisions; third, actions to reduce the operating and support costs of our systems; and fourth, outyear real budget growth.

Our FY 1997 budget request represents the continuation of a carefully constructed acquisition investment plan. It includes extending our modernization strategy through an integrated program approach.

Future programs must be carefully designed to be affordable and relevant for the future. The transition from current to future naval forces will not necessarily require one-for-one platform replacement. Rather, future programs must produce survivable multimission platforms and weapon systems -- true force multipliers -- capable of meeting a wide variety of mission requirements.

The Department recognizes the need to continue improving business practices by finding additional ways to reduce cost and make the acquisition process more responsive to rapidly changing technology. Acquisition reform initiatives support modernization programs by addressing three key areas: advanced technology insertion, cost reduction, and avoiding platform obsolescence.

In several critical areas, technological advances in the commercial sector outpace the defense sector. This is particularly true with information and communications systems. The Department is taking advantage of commercially developed advanced technologies by incorporating them earlier into our acquisition programs. Cooperative Engagement Capability is a good example -- over 60 percent of this program involves commercial off-the-shelf and nondevelopmental technology which integrates and shares real-time detection data from a variety of sources including ships' sensors and units ashore.

Enhanced warfighting results from technology insertion. Closer ties between the science and technology (S&T) community and the operators establish realistic acquisition program priorities based on warfighting needs, technological achievability, and realistic life cycle affordability. The Navy and Marine Corps are also increasing effectiveness and extending the life of existing systems through affordable near-term improvements. S&T roadmaps are being developed and employed to outline critical path developments, risk reduction for advanced system performance achievement, and basic and applied research in the production of new systems. Navy and Marine Corps programs benefit from increased attention to manufacturing science and technology. Specific examples include focused attention in areas such as advanced composite structures for integrated hull and systems designs, production of multifunctional integrated systems, agile ship construction integrated into advanced design procedures, and simulation capabilities for systems performance and production.

Security assistance programs, international cooperative programs, and defense industry-to-industry cooperation with allied and friendly nations provide ways to stretch our investment budget by minimizing duplicative defense technology investments and maximizing commonality of deployed equipments. Foreign Military Sales initiatives support U.S. foreign policy, enhance interoperability, and reduce Navy and Marine Corps production costs by combining our procurement requirements with purchases by other nations.

While today's platforms are expensive, they are significantly more capable and reliable. Since ships have long service lives, they are designed to accommodate future upgrades. Existing platforms are being modernized with weapon systems to allow future growth and technology refreshment. To this end, extensive use is being made of open systems architecture, commercial standards, modular components, and fiber optics.

EFFICIENCY

In conjunction with the National Performance Review, recommendations from the Commission on Roles and Missions, and other related activities, the Department of the Navy continues to pursue innovative ideas to increase efficiency. We are learning a great deal from private industry and have undertaken several major initiatives including waiver authority delegation; designation of reinvention laboratories; cycle time reductions; acquisition reform; and initial implementation of the Government Performance and Results Act (GPRA).

The waiver authority delegation initiative eliminates unnecessary and burdensome restrictions on operational commands. Capping a year of research, test, and evaluation, all DoN Reinvention Laboratories (17 Navy and 10 Marine Corps installations and commands) are now authorized to waive policies and regulations standing in the way of innovation, breakthroughs, and success.

The cycle time reduction initiative is creating shorter turn-around times on all processes, thereby improving readiness. As part of National Performance Review streamlining initiatives, the Department identified 25 candidate areas within which to create more efficient cycle times. These areas cover the budget process, acquisition management, test and evaluation, maintenance, training, and general administration.

Acquisition reform produces significant cost reduction in the procurement of major weapon systems. A special acquisition reform office was established within the Department of the Navy to help focus on structuring executable programs in the face of declining resources. With an anticipated three-year charter, its intent is to encourage and facilitate exemplary business practices in such areas as joint government/commercial ventures, procurement streamlining, and acquisition work force training.

The Department of the Navy is integrating the Navy and Marine Corps Program Objective Memorandum (POM) assessment process in order to articulate Navy and Marine Corps major issues early-on. The two Service's programming databases are being merged into one common DoN database. While each Service continues to develop its own submission to the DoN POM, early coordination in the assessment process will more effectively articulate budget requirements and allow for more efficient programming of scarce resources.

In summary, all these initiatives seek to reengineer key management processes so that the nation will receive the best return for invested defense dollars. The Department's overall objective is to provide high quality, cost effective combat ready forces.

CONCLUSION

As part of our continuing effort to ensure the proper strategic use of naval forces, we are completing the development of a new naval operational concept that will serve as a coherent link between the Naval Service's strategic concept presented in . . . *From the Sea and Forward . . . From the Sea* and the tactics, techniques, and procedures in Navy and Marine Corps doctrinal publications. The concept will logically support the National Security Strategy and National Military Strategy while highlighting the unique operational and warfighting capabilities that naval forces provide to the nation. As we proceed, we will continue to emphasize our underlying priorities of people, readiness, innovation and modernization, and efficiency.

During the past year, the Navy and Marine Corps have consistently answered the nation's call with success. We are proud of our achievement in making the strategic vision of *Forward . . . From the Sea* a compelling reality. In places as diverse as Kuwait, Somalia, Haiti, and Bosnia and Herzegovina, the Navy-Marine Corps Team has been forward-deployed and engaged in the full spectrum of operations from peacetime presence through humanitarian assistance to crisis response. That achievement is the result of the effort of many people over the past year and is the most important indicator of naval expeditionary capability *Forward . . . From the Sea*.

/s/
John H. Dalton
Secretary of the Navy

REPORT OF THE SECRETARY OF THE AIR FORCE

The United States Air Force remains the world's premier air and space force and is a critical contributor to our national security. The U.S. Air Force exists as a separate Service to project air and space power -- and American influence -- over long distances. That capability has improved over the years and today we are a decisive global force. Our mission is "To Defend the United States Through the Control and Exploitation of Air and Space." Since 1990, the most difficult challenge to that mission has been managing the shift in our strategic posture. Today, we are no longer the Cold War Air Force; nor are we the post-Cold War Air Force, concentrating on drawing down, closing bases, or defending our roles and missions.

We worked through this drawdown and preserved our core competencies, supported our people, and improved our readiness. We made some tough choices early on, targeting force reductions that brought us swiftly to an optimum level. At the same time, we sustained credible forces that consistently met the challenge of the National Military Strategy. We succeeded because we started with a clear vision that emphasized our primary responsibility -- to fight and win our nation's wars. That vision, *Global Reach -- Global Power*, remains our fundamental strategy for building the future Air Force. *Global Reach -- Global Power* is a living strategy that was first put to the test during Operation Desert Storm. It proved sound. Since Operation Desert Storm, that strategy has been more rigorously tested by global involvement in operations involving tens of thousands of flying hours and an operating tempo far beyond our Cold War norm. *Global Reach -- Global Power* met this challenge; and we are confident the basic principles of *Global Reach -- Global Power* will continue to serve the Air Force and our nation well into the next century.

While *Global Reach -- Global Power* provides the blueprint for a technologically superior force, expertly trained, highly skilled men and women are the backbone of that force. The sustained readiness, as well as future viability of our Service, demands that we continue to attract and retain quality people -- the very foundation of the Air Force. Today, the nation's Air Force is over 400,000 strong; and at any given moment, more than 14,000 airmen are temporarily deployed in support of global contingency operations, exercises, or humanitarian relief missions. We are proud of our men and women -- more than anything else, people are our future.

AIR FORCE CORE COMPETENCIES AND CORE VALUES

Central to *Global Reach -- Global Power* are Air Force core competencies -- air superiority, space superiority, precision employment, global mobility, and information dominance -- and core values -- integrity first, service before self, and excellence in all we do. Core competencies are the basic skills we bring to the joint table. Air Force core competencies provide America's CINCs the degree of air and space control necessary for U.S. and allied forces to freely position, maneuver, employ, and engage, while denying the same to adversary forces.

Core values are the standards we use to guide our efforts. Integrity is the source of our self-control -- the basis for trust that is imperative in today's military. In this world of me first and relative ethics, integrity is the hallmark of the military professional and marks military service as more than just another job. Air Force members realize, from their first day on active duty, that their individual needs are subordinate to those of the nation. That translates into service before self. Those who accept that commitment have earned our respect. Theirs is a passion for excellence -- seized by young men and women who have felt the personal satisfaction of performing at the peak of their abilities and who mentor others to excel with them. Integrity first . . . service before self . . . excellence in all we do -- these values set the standard for

our behavior, our service to country, and our treatment of one another. They ennoble us, reminding us of the importance of the profession we have chosen and the oath we have taken.

FUNDAMENTALS FOR A QUALITY AIR FORCE

As stewards of the nation's air and space forces, it is critical we responsibly allocate our resources to build a force capable of meeting future demands. The forward-looking initiatives of recent years have produced an air and space force that is proficient, versatile, and tailored to support our National Security Strategy. We will continue to execute our responsibilities with the disciplined approach we have followed in the past. This approach is based on four key commitments:

- We will recruit quality people and ensure they are trained and motivated to operate in a disciplined manner and to exhibit and respect Service core values.
- We will ensure our people and their families have the quality of life they deserve as they serve our nation.
- We will define our operational requirements and provide Global Reach -- Global Power capabilities with a clear vision of what we contribute to the U.S. military's joint team.
- We will fill those requirements with a lean and agile acquisition system.

Motivated, Disciplined People

Military service requires a high level of professional skill and a willingness to make personal sacrifices far beyond those in other occupations. It is an uncommon profession that calls for people of uncommon dedication. That dedication demands a commitment to core values and a duty environment free from discrimination and harassment. To get the most from Air Force people, we must give them the opportunity to perform to their potential. At the same time, we must keep sight of the fundamental reason we exist -- to fight and win our nation's wars. Reshaping our forces and training our people must be for this purpose above all others.

UNAMBIGUOUS, HIGH STANDARDS

The Air Force has always operated on the leading edge of technology, and the tools of our trade are lethal. This means we must recruit, train, and retain the right people. We are unwavering in our commitment to unambiguous, high standards -- personal and institutional. We expect every person to honor their vocation -- service to our nation -- and the nation demands it of us. This service does not come without personal responsibility. There is no tolerance of sexual harassment, discrimination, or substance abuse.

ACCOUNTABILITY

Accountability is a prerequisite of effective military operations. Further, it is essential to our ability to gain and sustain the trust of the American people. Consequently, standards must be enforced and responsibilities stressed. This sense of accountability is paramount for the good order and discipline of our force. In the Air Force, accountability begins at the top. We will not tolerate arrogance. By example, our senior leaders set the tone -- living the standards they expect of others. This message is a key component of Air Force education and training programs. It is a fundamental of the leadership training we reinforce during Command Orientation courses -- which challenge our wing, group, and squadron commanders to appreciate the human dimensions of command and to acknowledge they are responsible and accountable to a higher standard.

People First

Assuring our people an equitable quality of life has been the continuous priority of our leadership. As a force that relies heavily on its technological advantage, we depend on retaining highly experienced, motivated, well-trained people. We recognize the correlation between readiness and care for our families. We succeed in our mission by putting people first. To assure a balanced approach toward people first programs, we developed the Air Force Quality of Life Strategy. This strategy focuses our efforts on improving the quality of life for our members and their families.

PROTECTING OUR PEOPLE

Quality of life is about people -- our most important resource. Therefore, we have redoubled efforts aimed at protecting our people. At the top of our list is fair and equitable compensation. We stand with President Clinton and Defense Secretary Perry in support of maximum military pay raises allowable by law. These raises are essential to prevent accelerated growth of the widening pay raise gap between military members and their civilian counterparts. We are also working to decrease the amount of money members must absorb during a Permanent Change of Station (PCS). When we move Air Force families to satisfy military needs, they should not have to foot one-third of the bill.

Our next priority is access to safe, affordable housing -- where we continue to emphasize improved living standards for all our people. For instance, we strongly support the one-plus-one standard for single and unaccompanied dorms, an initiative aimed at enhancing individual performance while assuring personal privacy. Additionally, we fought for and won a one-time adjustment to monthly Basic Allowance for Quarters (BAQ) rates in FY 1996. As a result, in January 1996 our members can expect a 5.2 percent increase in their BAQ allowance. We are also working hard to establish variable housing allowance (VHA) locality floors. This effort would reverse survey trends that serve to drive our junior personnel into substandard housing. Our people do not expect to live in luxury. They simply want to be able to place their families in housing that will give them peace of mind when they are deployed.

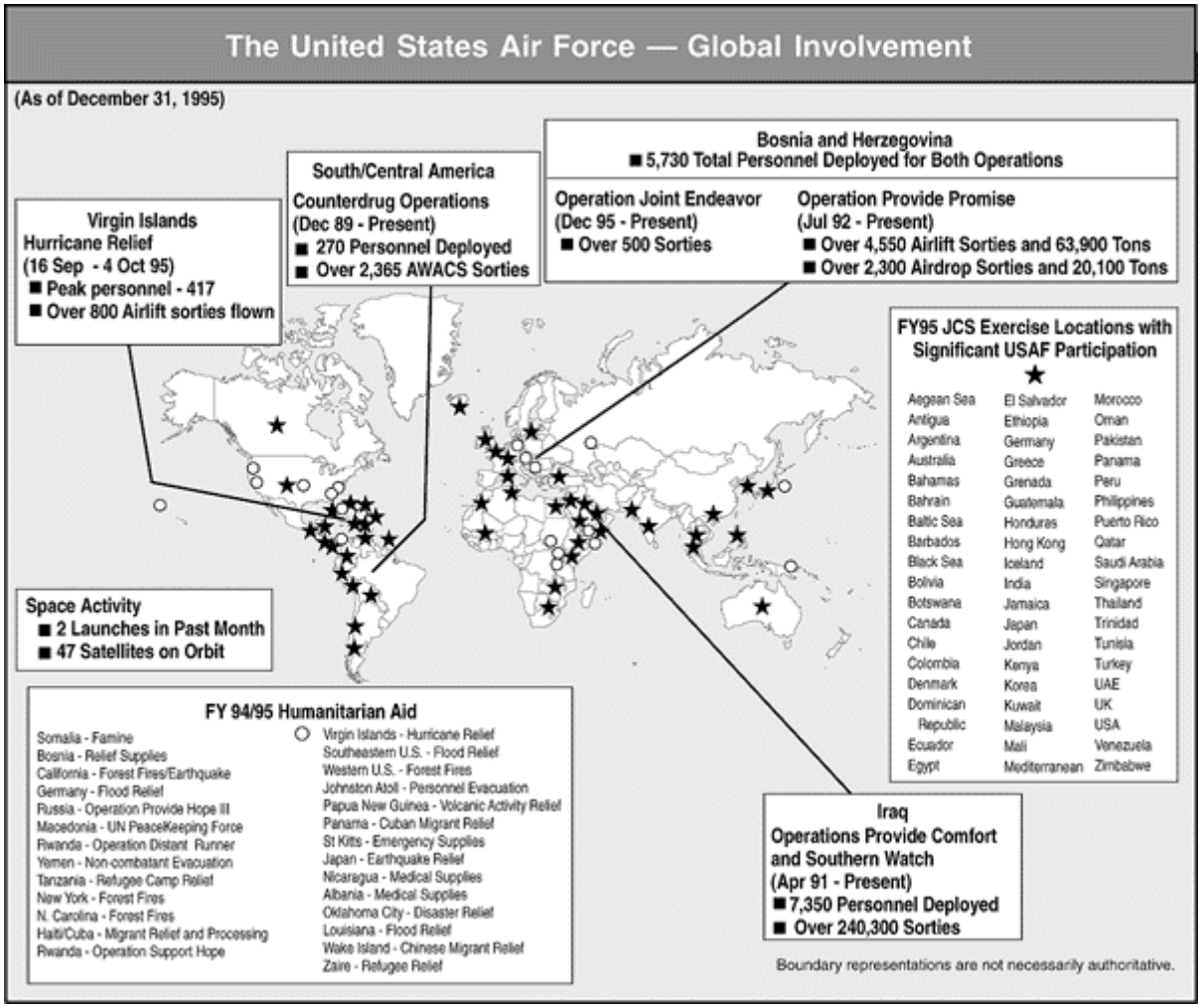
Other priorities include base and community, health care, and education programs. Air Force Child Development Centers, for example, provide care for 43,000 children daily; however, we are still unable to accommodate nearly 8,000 children, most of whom are under three years of age. So, we are building new centers and refurbishing others to expand child care services. Similarly, commissaries provide a vital benefit. Our people depend on commissary savings, and we are committed to preserving them. They also depend on accessible, quality health care; and we firmly support current DoD health care initiatives, including TRICARE and the Overseas Family Member Dental Program. We are also committed to preserving and expanding educational opportunities. Tuition assistance has been a valuable recruiting and retention tool, providing all our airmen the means to obtain associate, undergraduate, and masters degrees. At the same time, the Montgomery GI Bill continues to be a success story, with nearly 95 percent of those entering the Air Force enrolling in the program.

We also remain committed to our retirees. For those who have served and retired and for those who will retire from serving our nation, we are working to preserve the benefits they have earned and deserve. A solid retirement benefits package is what we use to offset the extraordinary demands and sacrifices we place on our people over the course of a career. We owe it to our retirees and to ourselves to honor the retirement pledge we make when each member of the team signs on.

REDUCING OPTEMPO

The operating tempo for many units remains high. While we believe we have a handle on this, it will present further challenges if we are called upon to support additional contingency operations. We are working hard to move the high level of PERSTEMPO toward the maximum desired level of less than 120

deployed days per person per year. We have developed three main initiatives to achieve this goal. First, we adopted global sourcing to balance the workload throughout the entire Air Force. Second, we reduced taskings where appropriate. Third, we are using our reserve components while we simultaneously seek new ways to use Guard and Reserve forces to ease the strain on our active component. Associate Reserve squadrons are one example. Recently, we established Associate Reserve squadrons to augment our KC-135 units, and we are in the process of standing up an Associate AWACS squadron as well. These innovations continue to demonstrate that after 22 years the Total Force policy still works.



The Air Force is Committed to the Joint Team

With this year's publication of the National Military Strategy and its focus on flexible and selective engagement, we are more certain than ever that our guiding construct, Global Reach -- Global Power, hits the mark. Global Reach -- Global Power ensures that the United States Air Force -- Active, Guard, and Reserve -- is fully prepared to fight and win our nation's wars. Its six objectives serve as the building blocks we use for planning and programming future forces.

SUSTAIN DETERRENCE

Deterrence of hostile actions against the United States, its allies, and vital interests remains a key objective of air and space forces. This is as true today as it was during the Cold War. The key to providing deterrence remains military strength and national will. The Air Force continues to provide a decisive element of that national military strength that enables the United States to deter aggression.

Nuclear deterrence remains a bedrock of national security. Even at reduced levels, Air Force people manning bombers -- B-52, B-1B, B-2 -- and land-based missiles -- Minuteman III and Peacekeeper -- remain ready and committed to support all Single Integrated Operational Plan requirements. Concurrently, these forces are planned to permit full compliance with START I and, if implemented, START II obligations while maintaining the flexibility to maximize our nation's nuclear deterrent posture.

Air Force combat forces help form the backbone of our nation's regional deterrence strategy. When combined with sea-based and land-based forces from the other Services, we work in synergy to deter aggression and assure friends and allies. At the same time, the proliferation of weapons of mass destruction (WMD) increases the importance of a strong conventional deterrent capability. To counter the chemical and biological threat, we plan to deploy greatly improved individual self-protection ensembles and aircraft decontamination technologies. We are also investing $700 million in an Airborne Laser (ABL) in the current Future Years Defense Program (FYDP). To maintain our leadership in counterair, ABL will be designed to provide our CINCs a boost-phase intercept capability that will protect our soldiers, sailors, airmen, and Marines by keeping the effects of chemical, biological, and nuclear warheads over enemy territory. When combined with joint terminal defenses, ABL will become part of a layered defense against threats from WMD. ABL offers the most revolutionary advance in warfighting technology in 40 years. Similarly, we are exploring the feasibility of placing exoatmospheric kinetic kill vehicles on existing Minuteman missiles as a capable, cost effective solution to evolving National Missile Defense needs.

PROVIDE VERSATILE COMBAT FORCES

The United States Air Force provides superior air and space forces, combining the responsiveness and firepower of long-range bombers and the flexibility of sophisticated fighters with the global presence of an air and space command, control, communications, computers, and intelligence (C4I) architecture. Air Force bombers can reach any point on the globe with lethal strikes in 20 hours. This was most vividly demonstrated in July, when the men and women of Dyess AFB, Texas, launched and recovered two B-1Bs that flew nonstop around-the-world after delivering ordnance on military training ranges in Italy, Korea, and Utah. Our bomber force remains crucial to the opening hours of a conflict. Over the past year, we have worked aggressively toward integrating the widest range of our newest munitions into the B-1B and B-2. B-1B weapons delivery modifications are on track and are phased to match weapons delivery schedules. B-2 flight testing at Edwards AFB, California, is half-way complete and is on schedule toward successful completion in 1997. Already, eight B-2s have been delivered and are operating at Whiteman AFB, Missouri.

Our rapidly deployable fighter forces provide us the staying power to overwhelm an opponent's forces, infrastructure, and command elements. In September, NATO air operations in Bosnia and Herzegovina once again proved airpower can have a decisive role when serving explicit policy objectives. Airpower's efforts in helping to lift the siege of Sarejevo saved lives and helped pave the way for a new round of negotiations. Our success over Bosnia and Herzegovina also demonstrates the value of unquestioned air dominance. Yet, air superiority is not an American birthright. It is a mission area in which we have no desire or intention to fight an equal fight. Our commitment to air superiority is a commitment to ensure

American soldiers and Marines can operate free from the threat of hostile aircraft and missiles. Future success in this mission area rests on our next generation fighter, the F-22. The F-22's lethal combination of stealth, supercruise, and advanced integrated avionics will provide an unmatched capability for decades to come.

Advanced, sophisticated airframes are only part of the equation. Fully trained, combat ready aircrews are an essential ingredient of combat readiness. To maximize economy and efficiency, our aircrews think globally but train locally. That means they depend on cooperative use arrangements with those who have competing interests for the same land and airspace. For our part, we are committed to responsible custodial care, preserving the environmental and cultural uniqueness of our nation's resources. To guarantee that our combat aircrews remain prepared to meet the security needs of our nation, assured access to local training ranges and airspace is an Air Force priority.

We are also working diligently to improve the accuracy and capabilities of our weapons throughout the force structure. Our Joint Direct Attack Munition (JDAM) will significantly improve our ability to conduct adverse weather, round-the-clock operations. JDAM is on a fast track -- successful Milestone II Defense Acquisition Board (DAB) was in September; down-selection to a single contractor occurred in October; and flight testing began in November. Our Joint Air-to-Surface Standoff Missile (JASSM) is on an equally aggressive procurement schedule -- our Milestone 0 DAB was in September; and by summer 1996, we plan to select two prime contractors to compete for this critical Precision Guided Munition (PGM) program.

SUPPLY RAPID, GLOBAL AIR MOBILITY

America's air mobility fleet gives our nation the speed and agility to respond to the full range of contingencies. No other nation in the world has this capability. Our airlifters and tankers can deploy fighting forces or humanitarian assistance worldwide. Air Force airlifters, including the C-17, made it possible for our nation to respond swiftly and generously to requests for aid in the wake of Hurricanes Marilyn and Opal. At the same time, Operation Provide Promise in Bosnia and Herzegovina and Operation Provide Comfort in Northern Iraq continue to demonstrate the enormous staying power of Air Force airlift.

This year, our C-17 program overcame past challenges and is now providing a highly capable military airlifter to lead our global mobility force into the next century. The recent Reliability, Maintainability, and Availability Evaluation was an unqualified success, with 99.2 percent on-time takeoffs. The aircraft has surpassed almost every performance standard set for it and has exceeded expectations with the last 11 aircraft delivered to the Air Force ahead of schedule. This year the C-17 Service and Industry Team was awarded the prestigious Collier Trophy for achievement in aeronautics. In addition to the C-17, we are modernizing our proven C-130 fleet by replacing older aircraft with the updated C-130 J.

CONTROL THE HIGH GROUND

Space offers an unsurpassed vantage point and the possibility to access any point on the earth's surface in a matter of minutes. Militarily, this means we gain an extraordinary advantage. That is precisely why we continue to move out on a number of key space modernization programs -- one of the few mission areas where you will find new program starts. In May, we awarded a Space Missile Tracking System contract and in August we awarded two Space Based Infrared Systems (SBIRS) contracts. Both are key elements of the Air Force's SBIRS architecture and will greatly enhance our joint missile warning capabilities. The SBIRS will incorporate new technologies that will enhance detection, improve reporting of ICBM/SLBM and tactical ballistic missiles, and provide critical tracking data for national and theater missile defense.

Concurrently, to help us assure continued access to space, we awarded contracts starting the Evolved Expendable Launch Vehicle (EELV) program. The goal of this program is to provide the nation with a family of low-cost launch vehicles early next century. The EELV is expected to lower the cost of both military and commercial access to space and to ensure the long-term competitiveness of our commercial launch industry.

This year we also put a request for proposal on the street -- worth a potential $3.6 billion -- for the next generation of 33 Global Positioning System (GPS) satellites. The GPS is integral to our warfighters and is rapidly becoming a true utility in the civilian community. It provides highly accurate positioning, velocity, and time information to an unlimited number of users on the ground, at sea, in the air, and in space. This next generation GPS constellation, designed to give our military forces decisive advantages in combat, will assure continued commercial access to all the advantages of this comprehensive space-based measuring system.

Air Force space acquisition programs have already felt a positive impact from the significant strides we have made this year improving the management of space programs. The new DoD Space Architect and Deputy Under Secretary of Defense for Space are two initial and important steps toward improving the integration of DoD and Intelligence Community space programs. The close cooperation of these two communities, particularly on SBIRS, resulted in the most cost-effective architecture for the nation. We are optimistic that the DoD Space Architect's next task, to evaluate military satellite communication architectures, will reap similar outstanding results.

ENSURE INFORMATION DOMINANCE

Dominating the information spectrum has become as critical to conflict as occupying the land or controlling the air. Within the information domain, events are seen and felt at the speed of light. We believe if we can analyze, assess, and act faster than our adversary -- we will win. At the heart of this process is the Air Force C4I Horizon, our concept for an overarching C4I architecture. This system of systems consists of Air Force space platforms such as Milstar and GPS; aircraft such as the U-2, RC-135, Joint STARS, AWACS, and Unmanned Aerial Vehicle (UAV); and ground command and control elements comprising the Theater Air Control System.

Recently, the Air Force was appointed DoD executive agent for Theater Air Defense Battle Management C4I. As part of our charter, we are developing a joint architecture providing our nation's leaders and theater CINCs with the information necessary to anticipate and monitor a crisis, act with a decisive advantage, and rapidly fine-tune operations to take full advantage of our highly responsive forces. In future military operations, information will be a weapon used not only to support other operations, but also to directly attack the enemy. To help face this information challenge, we activated our first UAV squadron at Nellis AFB, Nevada. This squadron is designed to bring improved information capabilities directly to the theater commanders.

Beyond these efforts, rapid technological improvements produced dramatic increases in storing, processing, and disseminating data and initiated a revolution in military affairs. That is why we developed Cornerstones of Information Warfare -- so we will have a sound doctrinal basis to fully exploit those capabilities while addressing our own vulnerabilities. That is also why we have decided to activate an Information Warfare Squadron at Shaw AFB, South Carolina. Additionally, we added funding this year to implement an expansive base information infrastructure of fiber optic networks. These networks will provide increased data throughput for the evolving information requirements of our warfighters. They will also provide essential digital switching, network control, and information protection capabilities to core facilities on each Air Force base.

BUILD U.S. INFLUENCE

Global Reach -- Global Power also serves as a blueprint to help the Air Force to extend a helping hand, to use airpower for diplomatic and humanitarian purposes, and to support other U.S. objectives worldwide. Indeed, the arrival of the first airlifters demonstrates commitment and resolve few can ignore. To put it into perspective, in 1994 the U.S. Transportation Command (USTRANSCOM) executed the equivalent of five Berlin airlifts in terms of ton-miles of cargo delivered in support of operations in Somalia, Rwanda, Bosnia and Herzegovina, and Haiti.

Global access and influence ultimately depend on the bonds of alliance and international cooperation. Partnership for Peace (PFP) is one of many initiatives the Air Force supports that underscore this conviction. This year, I went to Central Europe to assess first-hand the ongoing transformation in the European security environment. I met with military and civilian officials from Hungary, the Czech Republic, Romania, and Poland. In each country, I discovered a strong respect for our nation and its values, and an equally strong desire to improve the political, military, and economic ties between our nations. The Air Force, through the Air National Guard, also supports the National Guard State Partnership Program, linking U.S. states to Central and Eastern European nations. These types of efforts combine with the work our security assistance personnel do around the globe to foster stability, sustain hope, and provide relief. These efforts are samples of Air Force programs that pay direct dividends by building trust and cooperation with our friends and allies.

Lean and Agile Acquisition System

To remain the world's most respected air and space power, we must continue to modernize our forces with systems that possess a clear advantage over any potential challenger. Given the blistering pace of technological change, we will require a lean, agile acquisition system to capture and integrate key discoveries. We are building that system by streamlining acquisition processes, optimizing the use of our resources, and integrating innovative approaches to everything from computer software to depot maintenance.

ACQUISITION REFORM

In the spirit of reinvention, we have attacked acquisition reform with a vengeance, disassembling every process. At the heart of our reform efforts are Lightning Bolt Initiatives, designed to jump start cultural, business, and process changes within the acquisition revolution. We are revamping how we define requirements, select major system contractors, manage programs, and establish business arrangements. We are scrutinizing all our programs to translate needs into performance requirements. We are eliminating unnecessary specifications and encouraging contractors to propose streamlined industry standards and commercial practices. We are basing government source selection decisions and contractor performance on how well each contractor plans, manages, and trades the technical, schedule, and cost aspects of the program. Government and industry stakeholders are openly and continuously involved in making key program and business decisions, employing Integrated Process Teams (IPTs) and shared automated data bases. As a result, we are improving communications, decreasing contract and program lead-times, reducing program costs and personnel, and streamlining the information exchange and approval process.

Examples of Lightning Bolt Initiative successes enjoyed by the Air Force include elimination of obsolete or redundant acquisition policies. We started with 412 acquisition policy documents; only 131 remain -- a 68 percent reduction. As a result, we moved from acquisition programs requiring 1,000-page proposals, 100 contractual documents, and a 300-member System Program Office (SPO) to success stories like the

Wind Corrected Munitions Dispenser Program with its 96-page proposal, 21 contract data items, and 20-member SPO. Another initiative enabled us to start the EELV program with zero military specifications (MILSPECS) -- compared to the Titan launch vehicle's 104 MILSPECS. Likewise, by limiting the use of MILSPECS for the SBIRS program and including more agencies on our IPTs, we reduced that program's cost estimate by some $300 million and advanced the initial launch capability by more than two years. These statistics tell us we have just started a new paradigm for program management.

OPTIMIZING OUR RESOURCES

To realize more economical and efficient acquisition programs and to ensure that the forces we field complement the joint team, we have moved increasingly into cooperative programs with industry, our sister Services, other government agencies, and our allies. While the C-17, EELV, SBIRS, Milstar, and most of our PGM programs have joint users, two real success stories are the Joint Primary Aircraft Training System (JPATS) and Joint Strike Fighter (JSF) programs. By combining acquisition efforts when our needs coincide, we have been able to increase cost and manpower savings. JPATS made this a reality. JSF offers similar opportunities -- we have agreed to equally divide expenses and expertise with the Department of the Navy and the Services expect this approach to facilitate the development of an affordable multi-role aircraft. Another success story is the follow-on polar-orbiting meteorological satellite program that we combined with a similar program the Department of Commerce was developing. By joining together in this effort, called the National Polar-orbiting Operational Environmental Satellite System (NPOESS), we anticipate a savings of up to $300 million.

We also have joint-Service and international cooperative Science and Technology (S&T) efforts that will make significant contributions to joint warfighting. For example, we are currently conducting joint S&T programs with France and Germany in the field of ducted rockets, a technology that is crucial to extending the range of air-to-air missiles. We are working with the Navy and multinational partners on a new crew escape system to expand the crew escape envelope and increase the occupant size range for our crew ejection seats. The most successful example of our joint-Service, multinational S&T cooperation is the Speakeasy radio program. Speakeasy is a modular, reconfigurable radio system that will provide near-seamless communication abilities for our joint-Service and allied operations.

COMMERCIALIZATION

By breaking down the barriers between the defense and commercial sectors of the economy, we can also make better use of the nation's resources. For example, our EELV program is not only taking us to the next generation of spacelift capability, it is also proving that our new way of doing business is better and more efficient. We have included commercial-sector members on the team, removed layers of management, and eliminated MILSPECS. Private sector involvement is particularly crucial for this program because we expect the EELV will not only satisfy the needs of the military, but it will also help U.S. industry bolster its competitive position in the world space-launch market. Our S&T investments have complemented this effort and have contributed to America's economic stability by increasing our awareness and our emphasis on dual-use and generic manufacturing technologies.

ENHANCING AIR FORCE HEADQUARTERS

Balancing the competing demands of quality of life, modernization, and readiness, while preparing for the future, requires enlightened decision making. Because Global Reach -- Global Power exists in a dynamic environment -- influenced by sudden surges in technology and major shifts in the security environment -- we streamlined Air Force planning and programming to maximize our effectiveness and our efficiency. The result: we are appropriately postured to take full advantage of boundless opportunities on the horizon.

Initially, we focused on revitalizing our planning process. We introduced Air Force Executive Guidance as a common reference for all planning actions. We developed Global Presence, our reconceptualization of the nation's presence strategy; A New Vector for modeling and simulation, our blueprint for establishing a Joint Synthetic Battlespace and improving how joint force commanders use air and space resources; and Vistas, our strategic plan for Information Resources Management. We also strengthened our commitment to S&T, the foundation for future Air Force modernization; and we are celebrating the publication of New World Vistas, renewing our S&T vision. To ensure we achieve the clearest sense of our planning horizon, and help us institutionalize across-the-board long-range planning, we organized a team to develop a strategic vision for the Air Force of 2020 and to improve the front-end guidance for our 25-year mission-area plans.

With planning improvements well in hand, we developed an integrated process for collective Secretariat and Air Staff review of programming issues. We established the Air Force Group (AFG) to serve the senior leadership by providing an initial corporate-level integrated review and evaluation of programs. We also created Mission and Mission Support Panels to serve as centers of expertise, developing program and issue options for review at and above the AFG level. In addition, we formed IPTs, bringing experts together in cross-functional teams and ensuring a single point of contact for each item requiring corporate review. As a complementary measure aimed at ensuring issues outside the programming arena receive this same integrated review, we instituted weekly staff meetings where issues under work across the range of Air Force responsibilities are aired and worked by the combined Air Staff and Secretariat leadership.

Next, we took aim at financial management processes. This year, we cut negative unliquidated obligations (NULOs) -- where financial disbursements appear to exceed obligations -- by 71 percent and overaged in-transit disbursements -- the matching of overaged disbursements to obligation records -- by 63 percent. We are working to eliminate all overage NULOs by the close of FY 1996. We also took positive steps toward achieving an auditable financial statement. Current audits indicate we are in compliance in the key accounts of military and civilian pay. Finally, we are continuing to improve key financial management systems. These improved systems provide the information Air Force commanders need to run their operations while ensuring full compliance with current laws governing financial management.

TOWARD THE HORIZON

With the military drawdown substantially behind us, we are prepared to face whatever challenges may come our way. Those challenges are achievable because we have a vision that continues to provide America the world's greatest air and space force. That vision is *Global Reach -- Global Power*. It served us well over the past five years and promises to serve us even better in the years ahead.

We are poised to accept the challenges of the future. With the benefit of experience, insight, and imagination, the United States Air Force will continue to provide the premier air and space force for the 21st century. We are mindful that our basic mission remains bedrock -- to be prepared to fight and win our nation's wars, and to do so with the most efficient use of the nation's treasures -- its young people and scarce resources. To get there, we will continue to ask much of our people and they can continue to expect much from their leadership. We are a team within a team. We understand our responsibilities and live by our commitments. As a team, the Air Force will continue to provide *Global Reach -- Global Power* into the 21st century.

/s/
Sheila E. Widnall
Secretary of the Air Force

APPENDIX B:
BUDGET TABLES

Department of Defense — Budget Authority by Appropriation[a,c]
(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	71,557	69,566	69,783
(O&M)	88,309	117,234	93,791	89,172	88,341	93,751	93,491	89,171
Procurement	81,376	71,740	62,952	52,789	44,141	43,572	42,291	38,937
Research, Development, Test, and Evaluation (RDT&E)	36,459	36,193	36,623	37,974	34,567	34,522	34,856	34,746
Military Construction	5,130	5,188	5,254	4,554	6,009	5,426	6,910	5,275
Family Housing	3,143	3,296	3,738	3,941	3,501	3,393	4,304	3,858
Defense-wide Contingency							-601	-21
Revolving & Management Funds	586	2,701	4,587	4,503	4,354	5,260	1,753	1,661
Trust & Receipts	-832	-44,329	-5,733	-435	-809	-1,648	-446	-540
Deduct, Intragovt Receipt	-27	-29	-550	-1,069	-104	-180	-364	-237
Total, Current $	**292,999**	**276,208**	**281,883**	**267,402**	**251,364**	**255,652**	**251,761**	**242,632**
Constant FY 1997 Dollars								
Military Personnel	97,883	99,938	93,676	83,990	76,978	75,356	71,574	69,783
O&M	107,317	132,688	105,517	97,604	94,151	98,353	95,833	89,171
Procurement	94,997	81,504	69,923	57,435	47,070	45,511	43,233	38,937
RDT&E	43,056	41,268	40,701	41,300	36,840	36,068	35,650	34,746
Military Construction	6,014	5,916	5,850	4,965	6,417	5,674	7,068	5,275
Family Housing	3,723	3,741	4,150	4,279	3,723	3,542	4,400	3,858
Defense-wide Contingency							-614	-21
Revolving & Management Funds	674	3,087	5,111	4,894	4,640	5,493	1,798	1,661
Trust & Receipts	-992	-50,658	-6,361	-471	-860	-1,718	-456	-540
Deduct, Intragovt Receipt	-32	-33	-610	-1,159	-111	-188	-372	-237
Total, Constant $	**352,641**	**317,450**	**317,957**	**292,837**	**268,847**	**268,091**	**258,114**	**242,632**
% Real Growth								
Military Personnel	-1.0	2.1	-6.3	-10.4	-8.4	-2.1	-5.0	-2.5
O&M	-1.1	23.6	-20.5	-7.5	-3.5	4.5	-2.6	-7.0
Procurement	-0.8	-14.2	-14.2	-17.9	-18.1	-3.3	-5.0	-9.9
RDT&E	-6.5	-4.2	-1.4	1.5	-10.8	-2.1	-1.2	-2.5
Military Construction	-13.7	-1.6	-1.1	-15.1	29.2	-11.6	24.6	-25.4
Family Housing	-7.4	0.5	10.9	3.1	-13.0	-4.9	24.2	-12.3
Total	**-2.2**	**-10.0**	**0.2**	**-7.9**	**-8.2**	**-0.3**	**-3.7**	**-6.0**

[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.

[c] Tables B-1 and B-2 show the total DoD budget, which consists of both discretionary spending and direct spending. These terms were defined by the Balanced Budget and Emergency Deficit Control Act of 1985 (commonly known as the Gramm-Rudman-Hollings Act), which was extended and amended extensively by the Budget Enforcement Act of 1990 and the Omnibus Budget Reconciliation Act of 1993. Discretionary spending is controlled through annual appropriations acts. Direct spending (sometimes called mandatory spending) occurs as a result of permanent laws, for example medicare and medicaid payments. The Act constrains discretionary spending differently from direct spending and receipts. Discretionary spending currently is constrained by dollar limits (caps) on budget authority and outlays for each fiscal year through 1998.

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	63,268	62,785	59,799
Navy	99,977	103,470	90,311	83,198	78,055	76,873	76,353	73,977
Air Force	92,890	91,257	82,340	79,146	74,575	73,932	71,881	71,977
Defense Agencies/ OSD/JCS	18,663	21,134	29,151	22,158	19,380	21,120	22,228	21,379
Defense-wide	2,989	-31,477	6,445	18,097	16,883	20,460	18,514	15,500
Total, Current $	**292,999**	**276,208**	**281,883**	**267,402**	**251,364**	**255,652**	**251,761**	**242,632**
Constant FY 1997 Dollars								
Army	95,121	106,566	83,699	71,231	67,077	66,450	64,450	59,799
Navy	120,214	118,799	101,889	91,188	83,438	80,617	78,272	73,977
Air Force	111,499	103,712	92,667	86,560	79,622	77,547	73,688	71,977
Defense Agencies/ OSD/JCS	22,299	24,374	32,525	24,168	20,712	22,102	22,759	21,379
Defense-wide	3,508	-36,001	7,177	19,691	17,997	21,375	18,944	15,500
Total, Constant $	**352,641**	**317,450**	**317,957**	**292,837**	**268,847**	**268,091**	**258,114**	**242,632**
% Real Growth								
Army	-2.3	12.0	-21.5	-14.9	-5.8	-0.9	-3.0	-7.2
Navy	-0.6	-1.2	-14.2	-10.5	-8.5	-3.4	-2.9	-5.5
Air Force	-4.6	-7.0	-10.7	-6.6	-8.0	-2.6	-5.0	-2.3
Defense Agencies/ OSD/JCS	-1.2	9.3	33.4	-25.7	-14.3	6.7	3.0	-6.1
Defense-wide	28.8	-1,126.2	-119.9	174.4	-8.6	-18.8	-11.4	-18.2
Total	**-2.2**	**-10.0**	**0.2**	**-7.9**	**-8.2**	**-0.3**	**-3.7**	**-6.0**

[a] Numbers may not add to totals due to rounding. Entries for the three military departments include Retired Pay accrual.
[b] FY 1990-93 data for the three departments and defense agencies includes Gulf War incremental costs. FY 1991-93 defense-wide entries include appropriations that made available allied cash contributions to offset these incremental costs.
[c] In FY 1992, $9.1 billion was shifted from the Military Services to defense agencies/OSD for the new Defense Health Program (DHP). In FY 1993, the DHP began being reflected in the defense-wide line.

Federal Budget Trends (Dollars in Millions)

Table B-3

Fiscal Year	Federal Outlays as a % of GDP	DoD Outlays as a % of Federal Outlays	DoD Outlays as a % of GDP	Non-DoD Outlays as a % of Federal Outlays	Non-DoD Outlays as a % of GDP	DoD Outlays as a % of Net Public Spending[a]
1950	16.0	27.5	4.4	72.5	11.6	18.5
1955	17.8	51.5	9.2	48.5	8.6	35.6
1960	18.2	45.0	8.2	55.0	10.0	30.3
1965	17.6	38.8	6.8	61.2	10.8	25.2
1970	19.8	39.4	7.8	60.6	12.0	25.5
1971	20.0	35.4	7.1	64.6	12.9	22.4
1972	20.1	32.6	6.5	67.4	13.6	20.6
1973	19.3	29.8	5.7	70.2	13.5	19.0
1974	19.2	28.8	5.5	71.2	13.7	18.3
1975	22.0	25.5	5.6	74.5	16.4	16.5
1976	22.1	23.6	5.2	76.4	16.9	15.4
1977	21.3	23.4	5.0	76.6	16.4	15.5
1978	21.3	22.5	4.8	77.5	16.5	15.2
1979	20.7	22.8	4.7	77.2	16.0	15.4
1980	22.3	22.5	5.0	77.5	17.3	15.3
1981	22.9	23.0	5.3	77.0	17.6	15.8
1982	23.9	24.5	5.9	75.5	18.0	16.7
1983	24.4	25.4	6.2	74.6	18.2	17.3
1984	23.1	25.9	6.0	74.1	17.1	17.5
1985	23.9	25.9	6.2	74.1	17.7	17.6
1986	23.5	26.8	6.3	73.2	17.2	17.9
1987	22.6	27.3	6.2	72.7	16.4	17.6
1988	22.1	26.5	5.9	73.5	16.3	17.0
1989	22.1	25.8	5.7	74.2	16.4	16.5
1990	22.9	23.1	5.3	76.9	17.6	14.8
1991	24.0	19.8	4.6	80.2	18.8	12.6
1992	23.2	20.8	4.8	79.2	18.3	13.3
1993	22.5	19.8	4.5	80.2	18.0	12.2
1994	22.0	18.4	4.0	81.6	18.0	11.5
1995	21.7	17.1	3.7	82.9	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	29.9	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]	FY-97[f]
Active Component													
Army	780.8	781.0	780.8	771.8	769.7	750.6	725.4	611.3	572.4	541.3	508.6	495.0	495.0
Navy	570.7	581.1	586.8	592.6	592.7	582.9	571.3	541.9	510.0	465.7	434.6	424.5	406.9
Marine Corps	198.0	198.6	199.5	197.4	197.0	196.7	195.0	184.6	178.4	174.2	174.6	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	400.4	388.2	381.1
Total	**2151.0**	**2169.1**	**2174.1**	**2138.2**	**2130.2**	**2069.4**	**2002.6**	**1808.1**	**1705.1**	**1610.5**	**1518.2**	**1481.7**	**1457.0**
Reserve Component Military (Selected Reserve)													
ARNG	440.0	446.2	451.9	455.2	457.0	437.0	441.3	426.5	409.9	369.9	374.9	373.0	366.8
Army Reserve	292.1	309.7	313.6	312.8	319.2	299.1	299.9	302.9	275.9	259.9	241.6	230.0	214.9
Naval Reserve	129.6	141.5	148.1	149.5	151.5	149.4	150.5	142.3	132.4	107.6	100.6	98.9	95.9
MC Reserve	41.6	41.6	42.3	43.6	43.6	44.5	44.0	42.3	41.7	40.7	40.9	42.3	42.0
ANG	109.4	112.6	114.6	115.2	116.1	117.0	117.6	119.1	117.2	113.6	109.8	112.7	108.0
Air Force Reserve	75.2	78.5	80.4	82.1	83.2	80.6	84.3	81.9	82.6	79.6	78.3	74.0	73.3
Total	**1088.1**	**1130.1**	**1150.9**	**1158.4**	**1170.6**	**1127.6c**	**1137.6d**	**1114.9**	**1057.7**	**998.3**	**945.8**	**930.9**	**900.9**
Civilian[e]													
Army	420.0	413.0	417.9	392.9	402.9	380.4	365.5	333.6	294.2	279.5	272.7	265.8	256.3
Navy	352.9	342.1	338.1	347.8	354.3	341.0	329.0	309.0	285.2	269.1	259.3	246.2	239.6
Air Force	263.9	263.2	264.3	253.2	260.6	248.9	232.7	214.4	201.7	196.5	188.9	186.4	181.2
DoD Agencies	92.4	94.0	97.8	96.3	99.0	102.5	117.5	149.0	155.8	155.6	144.3	142.6	138.7
Total	**1129.2**	**1112.3**	**1133.1**	**1090.2**	**1116.8**	**1072.8**	**1044.5**	**1006.1**	**936.9**	**900.7**	**865.2**	**841.2**	**806.8**

[a] As of September 30, 1995.
[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] Projected in FY 1996 President's Budget.

U.S. Military Personnel in Foreign Areas (End Fiscal Year — In Thousands)

Table C-2

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92[b]	FY 93	FY 94[d]	FY 95
Germany	254	247	250	251	249	249	228	203	134	105	88	73
Other Europe	73	75	75	73	74	71	64	62	54	44	41	37
Europe, Afloat	25	36	33	31	33	21	18	20	17	17	9	8
South Korea	41	42	43	45	46	44	41	40	36	35	37	36
Japan	46	47	48	50	50	50	47	45	46	46	45	39
Other Pacific	16	16	17	18	17	16	15	9	3	1	1	1
Pacific Afloat (Including Southeast Asia)	18	20	20	17	28	25	16	11	13	17	15	13
Latin America/ Caribbean	13	12	13	13	15	21	20	19	18	18	36[d]	17
Miscellaneous	25	20	26	27	29	13	160	39[a]	23	25	15	14
Totalc	**511**	**515**	**525**	**524**	**541**	**510**	**609**	**448**	**344**	**308**	**287**	**238**

[a] Includes 118,000 shore-based and 39,000 afloat in support of Operation Desert Storm.
[b] As of September 30, 1995.
[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 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY98
Land-Based ICBMs[b]									
Minuteman II (1 warhead each) plus Minuteman III (3 warheads each)	950	950	880	737	625	535	530	530	500
Peacekeeper (10 warheads each)	50	50	50	50	50	50	50	50	50
Heavy Bombers (PMAI)[c]									
B-52G/B-52H	187	151	129	110	64	74	56	56	56
B-1B	90	89	84	84	84	60	60	60	60
B-2	0	0	0	0	3	6	9	10	12
Submarine-Launched Ballistic Missiles[b]									
Poseidon (C-3) and Trident (C-4) missiles on pre-Ohio-class submarines	368	352	176	96	48	0	0	0	0
Trident (C-4 and D-5) missiles on Ohio-class submarines	216	264	288	312	336	360	384	408	432
Strategic Defense Interceptor Aircraft (PMAI)[d]									
Active Aircraft	18	18	0	0	0	0	0	0	0
Air National Guard Aircraft	216	216	216	216	150	150	150	90	90

[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]PMAI = Primary mission aircraft inventory for active and reserve components. The numbers shown reflect only combat coded and training coded PMAI aircraft and not development/test or training 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 PMAI aircraft.

Department of Defense
General Purpose Forces Highlights

Table D-2

Land Forces	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY98
Army Divisions								
Active	18	14	14	12	12	10	10	10
Reserve	10	10	8	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	7	7	7	3	3	3	3
Reserve	27	27	24	24	24	22	18	18
Army Special Forces Groups								
Active	5	5	5	5	5	5	5	5
Reserve	4	4	4	2	2	2	2	2
Army Ranger Regiment	1	1	1	1	1	1	1	1
Tactical Air Forces (PMAI/Squadrons)[b]								
Air Force Attack and Fighter Aircraft								
Active	1,560/71	1,254/57	1,131/56	966/53	936/53	900/51	912/51	912/51
Reserve	861/43	924/43	816/42	639/40	576/38	528/39	528/39	528/39
Conventional Bombers								
B-52G	33	33	33	0	0	0	0	0
Navy Attack and Fighter Aircraft								
Active	654/59	678/61	610/56	590/50	528/44	504/37	420/35	440/35
Reserve	116/10	116/10	116/10	90/7	38/3	38/3	38/3	38/3
Marine Corps Attack and Fighter Aircraft								
Active	368/26	346/24	330/23	320/22	320/23	320/23	320/23	320/23
Reserve	84/8	72/6	72/6	68/5	48/4	48/4	48/4	48/4
Naval Forces								
Strategic Forces Ships	40	34	24	19	16	17	18	18
Battle Forces Ships	393	357	342	315	302	300	297	290
Support Forces Ships	62	57	51	41	35	24	24	24
Reserve Forces Ships	32	19	18	16	19	18	18	16
Total Ship Battle Forces	**527**	**467**	**435**	**391**	**372**	**359**	**357**	**348**
Mobilization Category B: SurfaceCombatants/ Mine Warfare Ships	16	16	15	0	1	2	6	9
Local Defense Mine Warfare Ships and Coastal Defense Craft	0	0	2	8	13	15	13	13
Total Other Forces[c]	**16**	**16**	**17**	**8**	**14**	**17**	**19**	**22**

[a]Includes the Eskimo Scout Group and the armored cavalry regiments.
[b]Primary mission aircraft inventory (combat coded aircraft only).
[c]Excludes auxiliaries and sealift forces.

Department of Defense Airlift and Sealift Force Highlights

Table D-3

	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98
Intertheater Airlift (PMAI)[a]									
C-5	109	109	109	109	107	104	104	104	104
C-141	234	234	234	214	214	199	187	163	143
KC-10[b]	57	57	57	57	54	54	54	54	54
C-17	0	0	0	2	9	17	22	24	28
Intratheater Airlift (PMAI)[a]									
C-130	460	461	417	380	424	428	432	430	412
Sealift Ships, Active[c]									
Tankers	28	20	20	20	18	18	12	11	11
Cargo	40	39	40	40	51	51	49	48	47
Sealift Ships, Reserve									
RRF[d]	96	96	97	97	93	77[e]	82	86	91

[a]PMAI — Primary mission aircraft inventory for active and reserve components. The numbers shown reflect only combat support and industrial funded PMAI aircraft and not development/test or training 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.