

**QUADRENNIAL
DEFENSE REVIEW
REPORT**



September 30, 2001

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QUADRENNIAL DEFENSE REVIEW REPORT

FOREWORD

On September 11, 2001, the United States came under vicious, bloody attack. Americans died in their places of work. They died on American soil. They died not as combatants, but as innocent victims. They died not from traditional armies waging traditional campaigns, but from the brutal, faceless weapons of terror. They died as the victims of war - a war that many had feared but whose sheer horror took America by surprise.

The war the nation fights today is not a war of America's choosing. It is a war that was brought violently and brutally to America's shores by the evil forces of terror. It is a war against America and America's way of life. It is a war against all that America holds dear. It is a war against freedom itself.

The attack on the United States and the war that has been visited upon us highlights a fundamental condition of our circumstances: we cannot and will not know precisely where and when America's interests will be threatened, when America will come under attack, or when Americans might die as the result of aggression. We can be clear about trends, but uncertain about events. We can identify threats, but cannot know when or where America or its friends will be attacked. We should try mightily to avoid surprise, but we must also learn to expect it. We must constantly strive to get better intelligence, but we must also remember that there will always be gaps in our intelligence. Adapting to surprise - adapting quickly and decisively - must therefore be a condition of planning.

The Quadrennial Defense Review was undertaken during a crucial time of transition to a new era. Even before the attack of September 11, 2001, the senior leaders of the Defense Department set out to establish a new strategy for America's defense that would embrace uncertainty and contend with surprise, a strategy premised on the idea that to be effective abroad, America must be safe at home. It sought to set the conditions to extend America's influence and preserve America's security. The strategy that results is built around four key goals that will guide the development of U.S. forces and capabilities, their deployment and use:

- Assuring allies and friends of the United States' steadiness of purpose and its capability to fulfill its security commitments;

- Dissuading adversaries from undertaking programs or operations that could threaten U.S. interests or those of our allies and friends;
- Deterring aggression and coercion by deploying forward the capacity to swiftly defeat attacks and impose severe penalties for aggression on an adversary's military capability and supporting infrastructure; and
- Decisively defeating any adversary if deterrence fails.

A central objective of the review was to shift the basis of defense planning from a "threat-based" model that has dominated thinking in the past to a "capabilities-based" model for the future. This capabilities-based model focuses more on how an adversary might fight rather than specifically whom the adversary might be or where a war might occur. It recognizes that it is not enough to plan for large conventional wars in distant theaters. Instead, the United States must identify the capabilities required to deter and defeat adversaries who will rely on surprise, deception, and asymmetric warfare to achieve their objectives.

Adopting this capabilities-based approach to planning requires that the nation maintain its military advantages in key areas while it develops new areas of military advantage and denies asymmetric advantages to adversaries. It entails adapting existing military capabilities to new circumstances, while experimenting with the development of new military capabilities. In short, it requires the transformation of U.S. forces, capabilities, and institutions to extend America's asymmetric advantages well into the future.

Transforming America's defense for the 21st century will require a long-standing commitment from our country and its leaders. Transformation is not a goal for tomorrow, but an endeavor that must be embraced in earnest today. The challenges the Nation faces do not loom in the distant future, but are here now. They involve protecting our critical bases of operation - including the most critical base of operation, the U.S. homeland - and projecting and sustaining U.S. forces in distant anti-access environments. They entail assuring U.S. information systems and providing persistent surveillance, tracking, and rapid engagement of adversary forces and capabilities. They require enhancing the capability and survivability of U.S. space systems and leveraging information technology and new concepts to provide for more effective joint operations.

Of necessity, our efforts will begin relatively small, but will grow significantly in pace and intensity. And over time, the full promise of transformation will be realized as we divest ourselves of legacy forces and they move off the stage and resources move into new concepts, capabilities, and organizations that maximize our warfighting effectiveness and the combat potential of America's men and women in uniform. This will not be a simple task. It requires steadfastness of purpose and the freedom to manage effectively and efficiently. It will require new tools to manage the Defense Department and an overhaul of existing approaches.

To support the transformation of the U.S. Armed Forces and to better manage the full range of activities of the Defense Department, the Quadrennial Defense Review identified a new approach to assessing and managing risk. This new approach will help to ensure that the Department of Defense is better able to meet near-term threats even as it invests in capabilities needed to safeguard the nation's future security.

This Quadrennial Defense Review was the product of the senior civilian and military leadership of the Department of Defense. It benefited from extensive consultation with the President of the United States. It was truly "top down" in that the decisions taken on strategy, forces, capabilities, and risks resulted from months of deliberations and consultation among the most senior Defense Department leadership. This report outlines the key changes needed to preserve America's safety and security in the years to come.

The Quadrennial Defense Review and the accompanying report were largely completed before the September 11, 2001 terror attacks on the United States. In important ways, these attacks confirm the strategic direction and planning principles that resulted from this review, particularly its emphasis on homeland defense, on surprise, on preparing for asymmetric threats, on the need to develop new concepts of deterrence, on the need for a capabilities-based strategy, and on the need to balance deliberately the different dimensions of risk. However, the attack on the United States on September 11, 2001 will require us to move forward more rapidly in these directions, even while we are engaged in the war against terrorism.

The vast array of complex policy, operational, and even constitutional issues concerning how we organize and prepare to defend the American people are now receiving unprecedented attention throughout the United States government. Importantly, since the scope of homeland

security responsibilities span an array of federal, state, and local organizations, it also will require enhanced inter-agency processes and capabilities to effectively defend the United States against attacks. The recent establishment of the Office of Homeland Security will galvanize this vital effort.

Thus, this report represents not so much an end but a beginning. Even as this report is concluded, the Department of Defense is engaged in the process of reviewing and implementing the directions set forth here through the Defense Department's military planning and resource allocation processes. These efforts, in turn, will allow the Defense Department leadership the opportunity to build upon and refine the decisions taken as the result of this review.

Finally, the loss of life and damage to our economy from the attack of September 11, 2001 should give us a new perspective on the question of what this country can afford for its defense. It would be reckless to press our luck with false economies or gamble with our children's future. This nation can afford to spend what is needed to deter the adversaries of tomorrow and to underpin our prosperity. Those costs do not begin to compare with the cost in human lives and resources if we fail to do so.

As we contend with the difficult challenges of the war on terrorism, we must also proceed on the path of transforming America's defense. Our commitment to the nation will be unwavering and our purpose clear: to provide for the safety and well being of all Americans and to honor America's commitments worldwide. As in generations before, the skill of our armed forces, their devotion to duty, and their willingness to sacrifice are at the core of our nation's strength. We must provide them with the resources and support that they need to safeguard peace and security not only for our generation but for generations to come.



Donald H. Rumsfeld
Secretary of Defense

I.

**AMERICA'S SECURITY
IN THE 21ST CENTURY**

The history of the 20th century has proven time and again that America's security is linked directly to that of other nations, and that America's prosperity depends on the prosperity of others. America seeks to use its current political, economic, and military advantages not to dominate others, but to build a durable framework upon which the United States and its allies and friends can prosper in freedom now and into the future.

Yet, as the September 2001 events have made clear, not all accept America's purposes or share its values. There are many threats against this Nation, and they will take many forms. They range from the threat of major war to the faceless threat of terror. America's approach to security must defend our way of life while protecting the security of all Americans and that of our allies and friends.

America's Role in the World

America's goals are to promote peace, sustain freedom, and encourage prosperity. U.S. leadership is premised on sustaining an international system that is respectful of the rule of law. America's political, diplomatic, and economic leadership contributes directly to global peace, freedom, and prosperity. U.S. military strength is essential to achieving these goals, as it assures friends and allies of an unwavering U.S. commitment to common interests.

America's security role in the world is unique. It provides the basis for a network of alliances and friendships. It provides a general sense of stability and confidence, which is crucial to the economic prosperity that benefits much of the world. And it warns those who would threaten the Nation's welfare or the welfare of U.S. allies and friends that their efforts at coercion or aggression will not succeed.

Even now as the Nation mourns the victims of terrorist attacks on the Pentagon and the World Trade Center, America's purposes remain clear and its commitment resolute.

U.S. Interests and Objectives

The purpose of the U.S. Armed Forces is to protect and advance U.S. national interests and, if deterrence fails, to decisively defeat threats to those interests. The United States has interests, responsibilities, and commitments that span the world. As a global power with an open society, the United States is affected by trends, events, and influences that originate from beyond its borders. The development of the defense posture should take into account the following enduring national interests:

- Ensuring U.S. security and freedom of action, including:
 - U.S. sovereignty, territorial integrity, and freedom
 - Safety of U.S. citizens at home and abroad
 - Protection of critical U.S. infrastructure
- Honoring international commitments, including:
 - Security and well-being of allies and friends
 - Precluding hostile domination of critical areas, particularly Europe, Northeast Asia, the East Asian littoral¹, and the Middle East and Southwest Asia
 - Peace and stability in the Western Hemisphere
- Contributing to economic well-being, including:
 - Vitality and productivity of the global economy
 - Security of international sea, air, and space, and information lines of communication
 - Access to key markets and strategic resources.

Protecting these interests requires vigorous commitment and support. It entails effective diplomacy, a strong economy, and a watchful and ready defense. When U.S. interests are protected, America and its friends prosper from peace and freedom. When U.S. interests are challenged, the Nation must possess the strength and resolve to provide for their defense.

¹The east Asian littoral is defined as the region stretching from south of Japan through Australia and into the Bay of Bengal.

A Changed Security Environment

An assessment of the global security environment involves a great deal of uncertainty about the potential sources of military threats, the conduct of war in the future, and the form that threats and attacks against the Nation will take. History has shown that rapid and unexpected changes, such as the collapse of the Soviet Union, can transform the geopolitical landscape. It also has demonstrated that new military technologies can revolutionize the form of military competition and the nature of armed conflict in ways that render military forces and doctrines of great powers obsolescent. While contending with such uncertainty is a key challenge for U.S. defense planning, certain features and trends of the security environment define not only today's geopolitical and military-technical challenges but also highlight critical operational challenges that the Nation's armed forces will need to master in the future.

Current Security Trends

Although U.S. military forces enjoy superiority in many dimensions of armed conflict, the United States is likely to be challenged by adversaries who possess a wide range of capabilities, including asymmetric approaches to warfare, particularly weapons of mass destruction. The United States cannot predict with a high degree of confidence the identity of the countries or the actors that may threaten its interests and security. But it is possible to identify the trends that will give rise to important threats and opportunities.

Key Geopolitical Trends. The international system, which was characterized during the Cold War by the division of countries into enduring and ideologically defined geopolitical blocs, has become more fluid and unpredictable. America's alliances have remained strong. But relations with other countries are often characterized both by competition and cooperation. U.S. strategy must take into account the important new geopolitical trends shaping the world.

Diminishing protection afforded by geographic distance. As the September 2001 events have horrifically demonstrated, the geographic position of the United States no longer guarantees immunity from direct attack on its population, territory, and infrastructure. Although the United States and its overseas forces were vulnerable to Soviet missiles during the Cold War, it is clear that over time an increasing number of states will acquire ballistic missiles with steadily increasing effective ranges. Moreover, economic

globalization and the attendant increase in travel and trade across U.S. borders has created new vulnerabilities for hostile states and actors to exploit by perpetrating attacks on the U.S. homeland.

Regional Security Developments. Although the United States will not face a peer competitor in the near future, the potential exists for regional powers to develop sufficient capabilities to threaten stability in regions critical to U.S. interests. In particular, Asia is gradually emerging as a region susceptible to large-scale military competition. Along a broad arc of instability that stretches from the Middle East to Northeast Asia, the region contains a volatile mix of rising and declining regional powers. The governments of some of these states are vulnerable to overthrow by radical or extremist internal political forces or movements. Many of these states field large militaries and possess the potential to develop or acquire weapons of mass destruction.

Maintaining a stable balance in Asia will be a complex task. The possibility exists that a military competitor with a formidable resource base will emerge in the region. The East Asian littoral - from the Bay of Bengal to the Sea of Japan - represents a particularly challenging area. The distances are vast in the Asian theater. The density of U.S. basing and en route infrastructure is lower than in other critical regions. The United States also has less assurance of access to facilities in the region. This places a premium on securing additional access and infrastructure agreements and on developing systems capable of sustained operations at great distances with minimal theater-based support.

The United States and its allies and friends will continue to depend on the energy resources of the Middle East, a region in which several states pose conventional military challenges and many seek to acquire - or have acquired - chemical, biological, radiological, nuclear, and enhanced high explosive (CBRNE) weapons. These states are developing ballistic missile capabilities, supporting international terrorism, and expanding their military means to coerce states friendly to the United States and to deny U.S. military forces access to the region.

With the notable exception of the Balkans, Europe is largely at peace. Central European states are becoming increasingly integrated with the West both politically and economically. An opportunity for cooperation exists with Russia. It does not pose a large-scale conventional military threat to NATO. It shares some important security concerns with the United States, including the problem of vulnerability to attack by ballistic missiles from regional aggressors, the danger of accidental or

unauthorized launches of strategic weapons, and the threat of international terrorism. Yet, at the same time, Russia pursues a number of policy objectives contrary to U.S. interests.

While the Western Hemisphere remains largely at peace, the danger exists that crises or insurgencies, particularly within the Andean region, might spread across borders, destabilize neighboring states, and place U.S. economic and political interests at risk.

Increasing challenges and threats emanating from the territories of weak and failing states. The absence of capable or responsible governments in many countries in wide areas of Asia, Africa, and the Western Hemisphere creates a fertile ground for non-state actors engaging in drug trafficking, terrorism, and other activities that spread across borders.

In several regions, the inability of some states to govern their societies, safeguard their military armaments, and prevent their territories from serving as sanctuary to terrorists and criminal organizations can also pose a threat to stability and place demands on U.S. forces. Conditions in some states, including some with nuclear weapons, demonstrate that potential threats can grow out of the weakness of governments as much as out of their strength.

Diffusion of power and military capabilities to non-state actors. The attacks against the U.S. homeland in September 2001 demonstrate that terrorist groups possess both the motivations and capabilities to conduct devastating attacks on U.S. territory, citizens, and infrastructure. Often these groups have the support of state sponsors or enjoy sanctuary and protection of states, but some have the resources and capabilities to operate without state sponsorship. In addition, the rapid proliferation of CBRNE technology gives rise to the danger that future terrorist attacks might involve such weapons.

Developing and sustaining regional security arrangements. U.S. alliances, as well as its wide range of bilateral security relationships, are a centerpiece of American security. The United States has enjoyed unparalleled success in building regional security arrangements. In addition, the United States has demonstrated an unmatched ability to develop coalitions of states to confront particular challenges, including Iraq's invasion of Kuwait. This ability will be critically important in responding to the events of September 11, 2001. These security arrangements and coalitions constitute a formidable combination of actual and potential power that enables the United States and its partners

to make common cause to shape the strategic landscape, protect shared interests, and promote stability.

Increasing diversity in the sources and unpredictability of the locations of conflict. Together, these trends produce a geopolitical setting that is increasingly complex and unpredictable. Unlike the Cold War period, where the key geographic regions of competition were well defined, the current period has already imposed demands for U.S. military intervention or activity on virtually every continent and against a wide variety of adversaries. The United States will not be able to develop its military forces and plans solely to confront a specific adversary in a specific geographic area. Instead, the United States could be forced to intervene in unexpected crises against opponents with a wide range of capabilities. Moreover, these interventions may take place in distant regions where urban environments, other complex terrain, and varied climatic conditions present major operational challenges.

Key Military-Technical Trends. Technology in the military sphere is developing as rapidly as the tremendous changes reshaping the civilian sector. The combination of scientific advancement and globalization of commerce and communications have contributed to several trends that significantly affect U.S. defense strategy.

Rapid advancement of military technologies. The ongoing revolution in military affairs could change the conduct of military operations. Technologies for sensors, information processing, precision guidance, and many other areas are rapidly advancing. This poses the danger that states hostile to the United States could significantly enhance their capabilities by integrating widely available off-the-shelf technologies into their weapon systems and armed forces. For the United States, the revolution in military affairs holds the potential to confer enormous advantages and to extend the current period of U.S. military superiority. Exploiting the revolution in military affairs requires not only technological innovation but also development of operational concepts, undertaking organizational adaptations, and training and experimentation to transform a country's military forces.

Increasing proliferation of CBRNE weapons and ballistic missiles. The pervasiveness of proliferation in an era of globalization has increased the availability of technologies and expertise needed to create the military means to challenge directly the United States and its allies and friends. This includes the spread of CBRNE weapons and their means of delivery, as well as advanced conventional weapons. In particular, the pace and

scale of recent ballistic missile proliferation has exceeded earlier intelligence estimates and suggests these challenges may grow at a faster pace than previously expected. Likewise, the biotechnology revolution holds the probability of increasing threats of biological warfare.

Emergence of new arenas of military competition. Technological advances create the potential that competitions will develop in space and cyber space. Space and information operations have become the backbone of networked, highly distributed commercial civilian and military capabilities. This opens up the possibility that space control - the exploitation of space and the denial of the use of space to adversaries - will become a key objective in future military competition. Similarly, states will likely develop offensive information operations and be compelled to devote resources to protecting critical information infrastructure from disruption, either physically or through cyber space.

Increasing potential for miscalculation and surprise. Together, these military-technical trends create an increased potential for miscalculation and surprise. In recent years, the United States has been surprised by the speed with which other states have progressed in developing weapons of mass destruction and ballistic missiles. In the future, it is unlikely that the United States will be able accurately to predict how successfully other states will exploit the revolution in military affairs, how rapidly potential or actual adversaries will acquire CBRNE weapons and ballistic missiles, or how competitions in space and cyber space will develop.

Emerging Operational Challenges

These geopolitical and military-technical trends will profoundly shape the future security environment. U.S. adversaries will have new capabilities that previous opponents lacked. U.S. defense strategy must take into account the need to transform U.S. forces to address several key emerging operational challenges that are inherent in current security trends. These challenges and an associated set of operational goals are explored in depth in Section V of this report.

State of the U.S. Military

To secure U.S. interests and objectives despite the challenges of the future security environment is the fundamental test for U.S. defense strategy and U.S. Armed Forces. While U.S. military forces - comprising a total force of

Active, Reserve, and National Guard forces - remain the best trained, best equipped, and most capable in the world, there are significant challenges that are eroding the advantage the United States currently enjoys. These challenges affect the readiness and tempo of personnel and units, the major weapons systems of the Armed Forces, and the defense infrastructure.

While U.S. forward-deployed and "first to fight" forces are trained and ready, other operational units are less ready. During the past decade, DoD sustained readiness of "first to fight" forces, but fiscal constraints prevented other units from achieving desired readiness levels. For example:

- The degraded readiness of non-deployed carrier airwings has made it increasingly difficult to return those airwings to desired readiness levels when they deploy.
- The U.S. military has an existing shortfall in strategic transport aircraft. This shortfall is aggravated by continuing low readiness of the C-5 airlifter, which has had an average peacetime mission capable rate over the last five years of approximately 60 percent. This readiness level is about eight percent below peacetime performance objectives for this aircraft.
- The readiness of the Army's highest priority units has been sustained at the expense of non-divisional and Reserve Component units and the institutional Army.
- The uniquely American superiority in training is eroding, particularly as evident in the aging infrastructure and instrumentation of U.S. training ranges.

Excessive operational demands on the force have taken a toll on military personnel. Since the end of the Cold War, the Armed Forces experienced a reduction of total personnel but an increase in the demands placed on those smaller forces. One indication of this increased operational tempo has been the growing reliance on the Reserve Component. The high tempo of operations, coupled with continued demand for workers in the private sector, adversely impacted the ability of the Armed Forces to recruit and retain quality people for a number of years.

While competition from a strong economy has made retention difficult, Services face additional personnel challenges as a result of a decade of downsizing. Because of the reduced accessions during most of the last 10 years, the Services must achieve higher than historic retention rates in order to properly man the force in the future.

The quality of life in the military is critical to retaining a Service member and his or her family. Recent surveys conducted by the Department indicate that the two primary reasons that Service members leave or consider leaving are basic pay and family separation. The current junior officer force has a proportionately higher married population than ever before experienced. Also, a very high proportion of married junior officers have dual-career marriages. As a result, the Armed Forces must not only retain the Service member, but also retain his or her family. Family separation due to extended deployments has a significant impact on a family's propensity to remain in the military.

The Department of Defense must recruit, train, and retain people with the broad skills and good judgment needed to address the dynamic challenges of the 21st century. Having the right kinds of imaginative, highly motivated military and civilian personnel, at all levels, is the essential prerequisite for achieving success. Advanced technology and new operational concepts cannot be fully exploited unless the Department has highly qualified and motivated enlisted personnel and officers who not only can operate these highly technical systems, but also can lead effectively in the highly complex military environment of the future.

DoD's civilian workforce also must be transformed to meet the challenges of the future. An increasing number of civilian personnel are nearing retirement age. In addition, as a result of downsizing in recent years, DoD has not sufficiently emphasized efforts to bring talented young civilian personnel into the Department to develop them to fill leadership positions. This has been particularly true with respect to young people with the skills needed to address emerging science and technology needs.

The pressure to maintain near-term readiness has also limited DoD's ability to recapitalize the force. At the end of the Cold War, the Department made a conscious decision to cut its procurement accounts and lived off the systems procured as a result of investments made in the 1980s. Although procurement spending has increased in recent years, it remains at historically low levels. As a result, many major systems are approaching the end of useful service. This in turn results in reduced mission capable rates, increased operating costs, and frustration in keeping aged equipment operational. The effect is to reduce the readiness of the force.

In addition, the defense infrastructure also has suffered from underfunding and neglect. Defense infrastructure includes facilities such as the piers, runways, and hangars that support U.S. combat forces, the buildings where DoD personnel work, and the housing in which military

personnel and their families live, and training space. These facilities are supported in two ways: sustainment and recapitalization. In recent years, facility sustainment was funded at only 75-80 percent of the requirement. The result is a deterioration of facilities and an accumulating restoration backlog that has been estimated to cost over \$60 billion. Recapitalization was also significantly underfunded. While the private sector replaces or modernizes facilities at an average rate of once every 57 years, defense infrastructure has fallen well short of that standard. For example, in 2001, the facilities replacement rate is 192 years. The result is a decaying infrastructure that is less and less capable of supporting current military needs. This trend must be reversed. If the sustainment of existing facilities and recapitalization continues to be neglected, the resulting facilities infrastructure will not be capable of supporting combat readiness. Also, the difficulty of retaining a workforce, which works and lives in substandard conditions, will only increase.

The Department of Defense cannot transform the force to deal with tomorrow's security threats without also addressing today's challenges. DoD must reverse the readiness decline of many operational units, selectively recapitalize the force, and arrest the decay of aging defense infrastructure.

II. DEFENSE STRATEGY

The defense strategy serves the broad national objectives of peace, freedom, and prosperity. Diplomatic and economic efforts seek to promote these objectives globally by encouraging democracy and free markets. U.S. defense strategy seeks to defend freedom for the United States and its allies and friends, and it helps to secure an international environment of peace that makes other goals possible.

Defense Policy Goals

The Department of Defense has developed a new strategic framework to defend the nation and secure a viable peace. This framework is built around four defense policy goals:

- Assuring allies and friends;
- Dissuading future military competition;
- Deterring threats and coercion against U.S. interests; and
- If deterrence fails, decisively defeating any adversary.

Assuring Allies and Friends. The United States cannot retreat from the world. The presence of American forces overseas is one of the most profound symbols of the U.S. commitment to allies and friends. The U.S. military plays a critical role in assuring allies and friends that the Nation will honor its obligations and will be a reliable security partner. Through its willingness to use force in its own defense and that of others and to advance common goals, the United States demonstrates its resolve and steadiness of purpose and the credibility of the U.S. military to meet the Nation's commitments and responsibilities. Toward these ends, the U.S. military will promote security cooperation with allies and friendly nations. A primary objective of U.S. security cooperation will be to help allies and friends create favorable balances of military power in critical areas of the world to deter aggression or coercion. Security cooperation serves as an important means for linking DoD's strategic direction with those of U.S. allies and friends.

Dissuading Future Military Competition. Through its strategy and actions, the United States influences the nature of future military competitions, channels threats in certain directions, and complicates military planning for potential adversaries in the future. Well targeted strategy and policy can therefore dissuade other countries from initiating future military competitions. The United States can exert such influence through the conduct of its research, development, test, and demonstration programs. It can do so by maintaining or enhancing advantages in key areas of military capability. Given the availability of advanced technology and systems to potential adversaries, dissuasion will also require the United States to experiment with revolutionary operational concepts, capabilities, and organizational arrangements and to encourage the development of a culture within the military that embraces innovation and risk-taking. To have a dissuasive effect, this combination of technical, experimental, and operational activity has to have a clear strategic focus. New processes and organizations are needed within the defense establishment to provide this focus.

Deterring Threats and Coercion Against U.S. Interests. A multifaceted approach to deterrence is needed. Such an approach requires forces and capabilities that provide the President with a wider range of military options to discourage aggression or any form of coercion. In particular, it places emphasis on peacetime forward deterrence in critical areas of the world. It requires enhancing the future capability of forward deployed and stationed forces, coupled with global intelligence, strike,² and information assets, in order to deter aggression or coercion with only modest reinforcement from outside the theater. Improving intelligence capabilities is particularly important, as these assets provide U.S. forces with critical information on adversaries' intentions, plans, strengths, and weaknesses. This new approach to deterrence also requires non-nuclear forces that can strike with precision at fixed and mobile targets throughout the depth of an adversary's territory; active and passive defenses; and rapidly deployable and sustainable forces that can decisively defeat any adversary. A final aspect of deterrence, addressed not in the QDR but in the Nuclear Posture Review³, is related to the offensive nuclear response capability of the United States.

² "Strike," as used in this report, is meant to represent the nature of the military objectives sought, not necessarily the weapons used. Strike capabilities may include not only long-range precision attacks delivered from aircraft and missiles, but also appropriately structured ground force attacks, naval fires, and other capabilities, depending on the circumstances - and particularly combinations of these capabilities.

³The Nuclear Posture Review is mandated by the Congress and due in December 2001. It will describe the size, structure, and posture of the nation's nuclear forces and the contribution they can make to deterrence in the coming decades.

If Deterrence Fails, Decisively Defeat Any Adversary. U.S. forces must maintain the capability to support treaty obligations and defeat the efforts of adversaries to impose their will on the United States, its allies, or friends. U.S. forces must maintain the capability at the direction of the President to impose the will of the United States and its coalition partners on any adversaries, including states or non-state entities. Such a decisive defeat could include changing the regime of an adversary state or occupation of foreign territory until U.S. strategic objectives are met.

Strategic Tenets

These defense policy goals are supported by an interconnected set of strategic tenets. It is only through careful attention and commitment to each of these tenets that the defense policy goals will be achieved. These tenets comprise the essence of U.S. defense strategy.

Managing Risks

The United States faces a world in which change occurs with ever-increasing speed. New challenges are constantly emerging, while longstanding threats endure. DoD must prepare for future challenges over time, while meeting extant threats at any given time. This tension between preparations for the future and the demands of the present requires the United States to balance the risks associated with each. Because resources are always finite, hard choices must be made that take into account a wider range of risks than was necessary in the past. Some of these risks are familiar, such as the possibility of a major war. Other risks - such as the possibilities of mass casualty terrorism, cyber warfare, or CBRNE warfare - are less well understood. Through the QDR, the Department has developed a new defense strategy and an associated risk management framework, and is in the process of building new performance measures, both to better manage the risks the United States faces and to meet the defense policy goals.

A Capabilities-Based Approach

The new defense strategy is built around the concept of shifting to a "capabilities-based" approach to defense. That concept reflects the fact that the United States cannot know with confidence what nation, combination of nations, or non-state actor will pose threats to vital U.S. interests or those of U.S. allies and friends decades from now. It is

possible, however, to anticipate the capabilities that an adversary might employ to coerce its neighbors, deter the United States from acting in defense of its allies and friends, or directly attack the United States or its deployed forces. A capabilities-based model - one that focuses more on how an adversary might fight than who the adversary might be and where a war might occur - broadens the strategic perspective. It requires identifying capabilities that U.S. military forces will need to deter and defeat adversaries who will rely on surprise, deception, and asymmetric warfare to achieve their objectives. Moving to a capabilities-based force also requires the United States to focus on emerging opportunities that certain capabilities, including advanced remote sensing, long-range precision strike, transformed maneuver and expeditionary forces and systems, to overcome anti-access and area denial threats, can confer on the U.S. military over time.

Defending the United States and Projecting U.S. Military Power

Defending the Nation from attack is the foundation of strategy. As the tragic September terror attacks demonstrate, potential adversaries will seek to threaten the centers of gravity of the United States, its allies, and its friends. As the U.S. military increased its ability to project power at long-range, adversaries have noted the relative vulnerability of the U.S. homeland. They are placing greater emphasis on the development of capabilities to threaten the United States directly in order to counter U.S. operational advantages with their own strategic effects. Therefore, the defense strategy restores the emphasis once placed on defending the United States and its land, sea, air, and space approaches. It is essential to safeguard the Nation's way of life, its political institutions, and the source of its capacity to project decisive military power overseas. In turn, the ability to project power at long ranges helps to deter threats to the United States and, when necessary, to disrupt, deny, or destroy hostile entities at a distance.

Strengthening Alliances and Partnerships

America's alliances and security relations give assurance to U.S. allies and friends and pause to U.S. foes. These relationships create a community of nations committed to common purposes. The defense strategy is premised on efforts to strengthen America's alliances and partnerships and to develop new forms of security cooperation. The American commitment to these security arrangements bolsters the security of U.S. allies and friends. Likewise, as witnessed in the wake of the terrorist

attacks on the United States, NATO's invocation of Article V demonstrates the commitment of America's partners to collective defense, which bolsters the security of the United States. These mutually reinforcing security relationships underpin the political stability on which the prosperity of civilized nations is built. And these arrangements are based on the recognition that a nation can be safe at home only if it is willing and able to contribute to effective security partnerships abroad.

The need to strengthen alliances and partnerships has specific military implications. It requires that U.S. forces train and operate with allies and friends in peacetime as they would operate in war. This includes enhancing interoperability and peacetime preparations for coalition operations, as well as increasing allied participation in activities such as joint and combined training and experimentation.

Maintaining Favorable Regional Balances

The defense strategy also places emphasis on maintaining favorable military balances in critical geographic areas. By maintaining such balances, the United States can secure peace, extend freedom, and assure its allies and friends. It can create high costs on a decision by potential adversaries to pursue dangerous forms of military competition. Finally, it may convince potential adversaries that the benefits of hostile acts against the interests of the United States are far outweighed by their costs and consequences.

Developing a Broad Portfolio of Military Capabilities

Creating substantial margins of advantage across key functional areas of military competition (e.g., power projection, space, and information) will require developing and sustaining a portfolio of key military capabilities to prevail over current challenges and to hedge against and dissuade future threats. Building upon the current superiority of U.S. conventional forces, this portfolio will include capabilities for conducting information operations, ensuring U.S. access to distant theaters, defending against threats to the United States and allied territory, and protecting U.S. assets in space. It will also require exploiting U.S. advantages in superior technological innovation; its unmatched space and intelligence capabilities; its sophisticated military training; and its ability to integrate highly distributed military forces in synergistic combinations for highly complex joint military operations.

Transforming Defense

Finally, the defense strategy calls for the transformation of the U.S. military and Defense establishment over time. Transformation is at the heart of this new strategic approach. The Department's leadership recognizes that continuing "business as usual" within the Department is not a viable option given the new strategic era and the internal and external challenges facing the U.S. military. Without change, the current defense program will only become more expensive to maintain over time, and it will forfeit many of the opportunities available to the United States today. Without transformation, the U.S. military will not be prepared to meet emerging challenges. At the same time, it would be imprudent to transform the entire force all at once. A balance must be struck between the need to meet current threats while transforming the force over time. Therefore, the Department is committed to undertaking a sustained process of transformation - based on clear goals - and strengthening the spirit of innovation in its people, while remaining prepared to deal with extant threats.

III.

PARADIGM SHIFT IN FORCE PLANNING

The DoD civilian and military leadership approached the force planning task acutely aware of the need to provide over time a richer set of military options across the operational spectrum than is available today and to ensure that U.S. forces have the means to adapt in time to surprise. The new force-sizing construct specifically shapes forces to:

- Defend the United States;
- Deter aggression and coercion forward in critical regions;
- Swiftly defeat aggression in overlapping major conflicts while preserving for the President the option to call for a decisive victory in one of those conflicts - including the possibility of regime change or occupation; and
- Conduct a limited number of smaller-scale contingency operations.

In doing so, DoD will maintain sufficient force generation capability and a strategic reserve to mitigate risks. This new construct - which supports the defense strategy - has four underlying elements.

First, it places new emphasis on the unique operational demands associated with the defense of the United States and restores the defense of the United States as the Department's primary mission.

Second, the approach shifts the focus of U.S. force planning from optimizing for conflicts in two particular regions - Northeast and Southwest Asia - to building a portfolio of capabilities that is robust across the spectrum of possible force requirements, both functional and geographical. This approach to planning responds to the capabilities-based strategy outlined above. It focuses more on how an adversary might fight than on who the adversary might be and where a war might occur. The shift is intended to refocus planners on the growing range of capabilities that adversaries might possess or could develop. It will require planners to define the military objectives associated with defeating aggression or coercion in a variety of potential scenarios in addition to conventional cross-border invasions. It calls for identifying,

developing, and fielding capabilities that, for a given level of forces, would accomplish each mission at an acceptable level of risk as established by the National Command Authorities.

Third, the new construct serves as a bridge from today's force, developed around the threat-based, two-MTW construct, to a future, transformed force. The United States will continue to meet its commitments around the world, including in Southwest and Northeast Asia, by maintaining the ability to defeat aggression in two critical areas in overlapping timeframes. The United States is not abandoning planning for two conflicts to plan for fewer than two. On the contrary, DoD is changing the concept altogether by planning for victory across the spectrum of possible conflict.

Fourth, the new construct for the first time takes into account the number and nature of the tasks actually assigned to the Armed Forces. Unlike previous force-sizing constructs, the new construct explicitly calls for the force to be sized for defending the homeland, forward deterrence, warfighting missions, and the conduct of smaller-scale contingency operations. As a result, the construct should better account for force requirements driven by forward presence and rotational issues. It will also better address requirements for low-density/high-demand (LD/HD) assets, enabling forces (e.g., transport aircraft), and active and reserve force-mix issues.

Defend the United States

The highest priority of the U.S. military is to defend the Nation from all enemies. The United States will maintain sufficient military forces to protect the U.S. domestic population, its territory, and its critical defense-related infrastructure against attacks emanating from outside U.S. borders, as appropriate under U.S. law. U.S. forces will provide strategic deterrence and air and missile defense and uphold U.S. commitments under NORAD. In addition, DoD components have the responsibility, as specified in U.S. law, to support U.S. civil authorities as directed in managing the consequences of natural and man-made disasters and CBRNE-related events on U.S. territory. Finally, the U.S. military will be prepared to respond in a decisive manner to acts of international terrorism committed on U.S. territory or the territory of an ally.

Ensuring the safety of America's citizens at home can only be achieved through effective cooperation among the many federal departments and agencies and state and local governments that have homeland security

responsibilities. It is clear that the roles, missions, and responsibilities of the many organizations and agencies involved in national preparedness must be clearly delineated through an integrated interagency process. The Office of Homeland Security, which is responsible for overseeing and coordinating a comprehensive national strategy to safeguard the United States against terrorism and respond to any attacks that may come, will lead this important process.

Those who respond first to any incident will likely be those closest to the event - local law enforcement and emergency response personnel. It was clear from the diverse set of agencies involved in responding to the September 11, 2001 terror attacks on the World Trade Center and the Pentagon that the Department of Defense does not and cannot have the sole responsibility for homeland security. DoD must institutionalize definitions of homeland security, homeland defense, and civil support and address command relationships and responsibilities within the Defense Department. This will allow the Defense Department to identify and assign homeland security roles and missions as well as examine resource implications. DoD must be committed to working through an integrated inter-agency process, which in turn will provide the means to determine force requirements and necessary resources to meet our homeland security requirements. DoD must bolster its ability to work with the organizations involved in homeland security to prevent, protect against, and respond to threats to the territorial United States. In particular, the Defense Department will place new emphasis upon counter terrorism training across federal, state, and local first responders, drawing on the capabilities of the Reserve and National Guard.

Preparing forces for homeland security may require changes in force structure and organization. For example, in conjunction with the ongoing review of national preparedness requirements undertaken by the Vice President, DoD will continue to examine the roles and responsibilities of its Active and Reserve forces to ensure they are properly organized, trained, equipped, and postured to provide for the effective defense of the United States. It is clear that U.S. forces, including the United States Coast Guard, require more effective means, methods, and organizations to perform these missions. As part of this examination, DoD will review the establishment of a new unified combatant commander to help address complex inter-agency issues and provide a single military commander to focus military support.

Defending the United States, which is the critical base of operations for U.S. defense activities worldwide, will be a crucial element of DoD's

transformation efforts. Integration of protection mechanisms (e.g., counterintelligence, security, infrastructure protection, and information assurance) will be a key component. In particular, the United States must enhance its capabilities to protect its critical infrastructure, especially infrastructure that supports oil and gas transportation and storage, information and communications, banking and finance, electrical power, transportation, water supply, emergency, and government services.

Deter Forward

As a global power, the United States has important geopolitical interests around the world.

DoD's new planning construct calls for maintaining *regionally tailored forces* forward stationed and deployed in Europe, Northeast Asia, the East Asian littoral, and the Middle East/Southwest Asia to assure allies and friends, counter coercion, and deter aggression against the United States, its forces, allies, and friends.

As this strategy and force planning approach are implemented, the United States will strengthen its forward deterrent posture. Over time, U.S. forces will be tailored increasingly to maintain favorable regional balances in concert with U.S. allies and friends with the aim of swiftly defeating attacks with only modest reinforcement and, where necessary, assuring access for follow-on forces. A key objective of U.S. transformation efforts over time will be to increase the capability of its forward forces, thereby improving their deterrent effect and possibly allowing for reallocation of forces now dedicated to reinforcement to other missions.

Security cooperation will serve as an important means for linking DoD's strategic direction with those of its allies and friends. DoD will focus its peacetime overseas activities on security cooperation to help create favorable balances of military power in critical areas of the world and to deter aggression and coercion. A particular aim of DoD's security cooperation efforts will be to ensure access, interoperability, and intelligence cooperation, while expanding the range of pre-conflict options available to counter coercive threats, deter aggression, or favorably prosecute war on U.S. terms.

Major Combat Operations

U.S. forces will remain capable of undertaking major combat operations on a global basis and will train to be effective across a wide range of combat conditions and geographic settings. The focus will be on the ability to act quickly when challenged and to win decisively at a time and place and in the manner of the President's choosing.

For planning purposes, U.S. forces will remain capable of swiftly defeating attacks against U.S. allies and friends in any two theaters of operation in overlapping timeframes. Combat operations will be structured to eliminate enemy offensive capability across the depth of its territory, restore favorable military conditions in the region, and create acceptable political conditions for the cessation of hostilities. In addition, U.S. forces will degrade an aggressor's ability to coerce others through conventional or asymmetric means, including CBRNE weapons. U.S. forces will fight from a forward deterrent posture with immediately employable forces, including long-range precision strike capabilities from within and beyond the theater, and rapidly deployable maneuver capabilities.

At the direction of the President, U.S. forces will be capable of decisively defeating an adversary in one of the two theaters in which U.S. forces are conducting major combat operations by imposing America's will and removing any future threat it could pose. This capability will include the ability to occupy territory or set the conditions for a regime change if so directed.

Smaller-Scale Contingencies

The new planning approach requires the United States to maintain and prepare its forces for smaller-scale contingency operations in peacetime, preferably in concert with allies and friends. This approach recognizes that such contingencies could vary in duration, frequency, intensity, and the number of personnel required. DoD will explicitly plan to provide a rotational base - a larger base of forces from which to provide forward-deployed forces - to support long-standing contingency commitments in the critical areas of interest. These long-standing commitments will, in effect, become part of the U.S. forward deterrent posture.

Moreover, DoD will ensure that it has sufficient numbers of specialized forces and capabilities to ensure that it does not overstress elements of the force when it is involved in smaller-scale contingency operations.

Current Forces

Today's force structure - both Active and Reserve components - is the baseline from which the Department will develop a transformed force for the future. The current force structure, shown in the table below, was assessed across several combinations of scenarios on the basis of the new defense strategy and force sizing construct, and the capabilities of this force were judged as presenting moderate operational risk, although certain combinations of warfighting and smaller-scale contingency scenarios present high risk.

Army

Divisions (Active/National Guard)	10/8
Active Armored Cavalry/Light Cavalry Regiments	1/1
Enhanced Separate Brigades (National Guard)	15

Navy

Aircraft Carriers	12
Air Wings (Active/Reserve)	10/1
Amphibious Ready Groups	12
Attack Submarines	55
Surface Combatants (Active/Reserve)	108/8

Air Force

Active Fighter Squadrons	46
Reserve Fighter Squadrons	38
Reserve Air Defense Squadrons	4
Bombers (Combat-Coded)	112

Marine Corps (3 Marine Expeditionary Forces)

Divisions (Active/Reserve)	3/1
Air Wings (Active/Reserve)	3/1
Force Service Support Groups (Active/Reserve)	3/1

Just as U.S. forces have transformed in the past, the process of fundamental transformation to sustain U.S. military advantages, meet critical operational goals, and dominate future military competitions has begun.

The Department of Defense has embarked on an ambitious transformation of U.S. military forces to meet such challenges. As this transformation effort matures - and as it produces significantly higher output of military value from each element of the force - DoD will explore additional opportunities to restructure and reorganize the Armed Forces.

To support this strategy, DoD will continue to rely on Reserve Component forces. To ensure the appropriate use of the Reserve Components, DoD will undertake a comprehensive review of the Active and Reserve mix, organization, priority missions, and associated resources. This review will build on recent assessments of Reserve Component issues that highlighted emerging roles for the Reserve Components in the defense of the United States, in smaller-scale contingencies, and in major combat operations.

IV. REORIENTING THE U.S. MILITARY GLOBAL POSTURE

During the latter half of the 20th century, the United States developed a global system of overseas military bases primarily to contain aggression by the Soviet Union. U.S. overseas presence aligned closely with U.S. interests and likely threats to those interests. However, this overseas presence posture, concentrated in Western Europe and Northeast Asia, is inadequate for the new strategic environment, in which U.S. interests are global and potential threats in other areas of the world are emerging.

A reorientation of the posture must take account of new challenges, particularly anti-access and area-denial threats. New combinations of immediately employable forward stationed and deployed forces; globally available reconnaissance, strike, and command and control assets; information operations capabilities; and rapidly deployable, highly lethal and sustainable forces that may come from outside a theater of operations have the potential to be a significant force multiplier for forward stationed forces, including forcible entry forces. One of the goals of reorienting the global posture is to render forward forces capable of swiftly defeating an adversary's military and political objectives with only modest reinforcement. Decisively defeating an adversary would likely require substantial reinforcement even after transformation.

Transforming the U.S. global military posture begins with the development of new ways to deter conflict. Deterrence in the future will continue to depend heavily upon the capability resident in forward stationed and forward deployed combat and expeditionary forces, including forcible entry forces, along with the rapidly employable capabilities that the U.S. military possess throughout the globe. U.S. forces must possess a wide range of offensive and defensive capabilities that can achieve strategic and operational objectives in the face of determined adversaries, to include those armed with asymmetric weapons of war. DoD will pursue new deterrence tools that not only hold at risk an adversary's military forces and other valued assets, but also extend greater protection to allies and friends in crisis through capabilities such as missile defenses, defensive information operations, and counter-terrorist operations.

Capabilities and forces located in the continental United States and in space are a critical element of this new global posture. Long-range strike aircraft and special operations forces provide an immediately employable supplement to forward forces to achieve a deterrent effect in peacetime. New forms of deterrence, emphasizing the strategic and operational effects that U.S. capabilities can impose upon an adversary, can incorporate globally distributed capabilities and forces to rapidly strike with precision mobile and fixed targets at various distances.

One of the goals of reorienting the global posture is to render forward forces capable of swiftly defeating an adversary's military and political objectives with only modest reinforcement. Key requirements for this reorientation include new combinations of immediately employable forward stationed and deployed forces; expeditionary and forcible entry capabilities; globally available reconnaissance, strike, and command and control assets; information operations; special operations forces; and rapidly deployable, highly lethal and sustainable forces that may come from outside a theater of operations. Decisively defeating an adversary will require substantial reinforcement even after transformation.

Based on changes in the international security environment, DoD's new strategic approach, and this transformed concept of deterrence, the U.S. global military posture will be reoriented to:

- Develop a basing system that provides greater flexibility for U.S. forces in critical areas of the world, placing emphasis on additional bases and stations beyond Western Europe and Northeast Asia.
- Provide temporary access to facilities in foreign countries that enable U.S. forces to conduct training and exercises in the absence of permanent ranges and bases.
- Redistribute forces and equipment based on regional deterrence requirements.
- Provide sufficient mobility, including airlift, sealift, pre-positioning, basing infrastructure, alternative points of debarkation, and new logistical concepts of operations, to conduct expeditionary operations in distant theaters against adversaries armed with weapons of mass destruction and other means to deny access to U.S. forces.

Accordingly, the Department has made the following decisions:

- The Secretary of the Army will accelerate the introduction of forward-stationed Interim Brigade Combat Teams (IBCTs) to strengthen deterrence and improve U.S. strategic responsiveness on a global basis. In consultation with its European Allies, the United States envisages that an IBCT should be stationed in the European area by 2007. In addition, the Secretary of the Army will explore options for enhancing ground force capabilities in the Arabian Gulf.
- The Secretary of the Navy will increase aircraft carrier battlegroup presence in the Western Pacific and will explore options for homeporting an additional three to four surface combatants, and guided cruise missile submarines (SSGNs), in that area.
- The Secretary of the Air Force will develop plans to increase contingency basing in the Pacific and Indian Oceans, as well as in the Arabian Gulf. The Secretary of the Air Force will ensure sufficient en route infrastructure for refueling and logistics to support operations in the Arabian Gulf or Western Pacific areas.
- The Secretary of the Navy will develop new concepts of maritime pre-positioning, high-speed sealift, and new amphibious capabilities for the Marine Corps. The Secretary of the Navy will develop options to shift some of the Marine Corps' afloat pre-positioned equipment from the Mediterranean toward the Indian Ocean and Arabian Gulf to be more responsive to contingencies in the Middle East. In consultation with U.S. allies and friends, the Secretary of the Navy will explore the feasibility of conducting training for littoral warfare in the Western Pacific for the Marine Corps.
- DoD will also recommend changes in the worldwide alignment of special operations forces assets to account for new regional emphases in the defense strategy.
- The United States will maintain its critical bases in Western Europe and Northeast Asia, which may also serve the additional role of hubs for power projection in future contingencies in other areas of the world.

V. CREATING THE U.S. MILITARY OF THE 21ST CENTURY

Achieving the objectives of the defense strategy requires the transformation of the U.S. Armed Forces. Transformation results from the exploitation of new approaches to operational concepts and capabilities, the use of old and new technologies, and new forms of organization that more effectively anticipate new or still emerging strategic and operational challenges and opportunities and that render previous methods of conducting war obsolete or subordinate. Transformation can involve fundamental change in the form of military operations, as well as a potential change in their scale. It can encompass the displacement of one form of war with another, such as fundamental change in the ways war is waged in the air, on land and at sea. It can also involve the emergence of new kinds of war, such as armed conflict in new dimensions of the battlespace.

Transformation has intellectual, social and technological dimensions. Fundamental changes in the conceptualization of war as well as in organizational culture and behavior are usually required to bring it about. During the early phase of transformation, only a small portion of the force is typically transformed. However, small transformed forces with a critical mass of spearhead capabilities can produce disproportionate strategic effects. Because transformation is highly path-dependent, choices made today may constrain or enhance options tomorrow.

To support the transformation effort, and to foster innovation and experimentation, the Department will establish a new office reporting directly to the Secretary and the Deputy Secretary of Defense. The Director, Force Transformation will evaluate the transformation efforts of the Military Departments and promote synergy by recommending steps to integrate ongoing transformation activities.

To further facilitate transformation, the Military Departments and Defense Agencies will develop transformation roadmaps that specify timelines to develop Service-unique capabilities necessary to meet the six critical operational goals described below.

Operational Goals

Not all change in military capabilities, however desirable for other reasons, is transformational. The purpose of transformation is to maintain or improve U.S. military preeminence in the face of potential disproportionate discontinuous changes in the strategic environment. Transformation must therefore be focused on emerging strategic and operational challenges and the opportunities created by these challenges. Six critical operational goals provide the focus for DoD's transformation efforts:

- Protecting critical bases of operations (U.S. homeland, forces abroad, allies, and friends) and defeating CBRNE weapons and their means of delivery;
- Assuring information systems in the face of attack and conducting effective information operations;
- Projecting and sustaining U.S. forces in distant anti-access or area-denial environments and defeating anti-access and area-denial threats;
- Denying enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike, through a combination of complementary air and ground capabilities, against critical mobile and fixed targets at various ranges and in all weather and terrains;
- Enhancing the capability and survivability of space systems and supporting infrastructure; and
- Leveraging information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that includes a tailorable joint operational picture.

Protecting the American homeland from attack is the foremost responsibility of the U.S. Armed Forces and a primary mission for the Reserve Components. Future adversaries will most certainly have a range of new means with which to threaten the United States. It is possible to identify confidently some of these means, including new techniques of terror; ballistic and cruise missiles; weapons of mass destruction, including advanced biological weapons; and weapons of mass disruption, such as information warfare attacks on critical information infrastructure. Others, like those used to attack the United States on September 11, 2001, may be a surprise. Defenses against known and emerging threats must be developed. New approaches to achieving early warning of new threats are a high priority.

The increasing dependence of societies and military forces on advanced information networks creates new vulnerabilities and opportunities. Potential adversaries could exploit these vulnerabilities through means such as computer network attack and directed energy weapons. The emergence of these new tools of warfare also provides opportunities for non-kinetic attack by U.S. forces.

Future adversaries could have the means to render ineffective much of our current ability to project military power overseas. Saturation attacks with ballistic and cruise missiles could deny or delay U.S. military access to overseas bases, airfields, and ports. Advanced air defense systems could deny access to hostile airspace to all but low-observable aircraft. Military and commercial space capabilities, over-the-horizon radars, and low-observable unmanned aerial vehicles could give potential adversaries the means to conduct wide-area surveillance and track and target American forces and assets. Anti-ship cruise missiles, advanced diesel submarines, and advanced mines could threaten the ability of U.S. naval and amphibious forces to operate in littoral waters. New approaches for projecting power must be developed to meet these threats.

Adversaries will also likely seek to exploit strategic depth to their advantage. Mobile ballistic missile systems can be launched from extended range, exacerbating the anti-access and area-denial challenges. Space denial capabilities, such as ground-based lasers, can be located deep within an adversary's territory. Accordingly, a key objective of transformation is to develop the means to deny sanctuary to potential adversaries. This will likely require the development and acquisition of robust capabilities to conduct persistent surveillance, precision strike, and maneuver at varying depths within denied areas.

In addition to exploiting space for their own purposes, future adversaries will also likely seek to deny U.S. forces unimpeded access to space. Space surveillance, ground-based lasers and space jamming capabilities, and proximity micro satellites are becoming increasingly available. A key objective for transformation, therefore, is not only to ensure the U.S. ability to exploit space for military purposes, but also as required to deny an adversary's ability to do so.

Finally, new information and communications technologies hold promise for networking highly distributed joint and combined forces and for ensuring that such forces have better situational awareness - both about friendly forces as well as those of adversaries - than in the past. Information technology holds vast potential for maximizing the effectiveness of American men and women in uniform.

Transformation Pillars

Transformation is not an end point. DoD's approach to transformation rests on four pillars:

- Strengthening joint operations through standing joint task force headquarters, improved joint command and control, joint training, and an expanded joint forces presence policy;
- Experimenting with new approaches to warfare, operational concepts and capabilities, and organizational constructs such as standing joint forces through wargaming, simulations and field exercises focused on emerging challenges and opportunities;
- Exploiting U.S. intelligence advantages through multiple intelligence collection assets, global surveillance and reconnaissance, and enhanced exploitation and dissemination; and
- Developing transformational capabilities through increased and wide-ranging science and technology, selective increases in procurement, and innovations in DoD processes.

Strengthening Joint Operations

To better meet future warfare challenges, DoD must develop the ability to integrate combat organizations with forces capable of responding rapidly to events that occur with little or no warning. These joint forces must be scalable and task-organized into modular units to allow the combatant commanders to draw on the appropriate forces to deter or defeat an adversary. The forces must be highly networked with joint command and control, and they must be better able to integrate into combined operations than the forces of today.

These joint forces will be used to manage crises, forestall conflict, and conduct combat operations. They must be lighter, more lethal and maneuverable, survivable, and more readily deployed and employed in an integrated fashion. They must be not only capable of conducting distributed and dispersed operations, but also able to force entry in anti-access or area-denial environments.

Joint and Combined Command and Control

Future military responses will require the rapid movement and integration of joint and combined forces. To be successful, operations will demand a flexible, reliable, and effective joint command and control architecture that provides the flexibility to maneuver, sustain, and protect U.S. forces across the battlefield in a timely manner.

Such a joint command and control structure must reside not only at the joint command, but also extend down to the operational service components. The structure must be networked to ensure shared battlespace awareness. It must be supported by the appropriate doctrine, tactics, techniques, and procedures, as well as a highly trained operational force. Most important, it must develop and foster a joint professional culture, a requirement that presents a significant challenge to service and joint training and professional education programs. The joint command and control system - both the information that flows through the network and the equipment upon which it resides - must be secure and protected from an adversary's information operations or other attacks.

U.S. forces require the ability to communicate not only with one another, but also with other government agencies and allies and friends. Such joint and combined interoperability requires forces that can immediately "plug" into the joint battlefield operating systems (command and control, intelligence, fire support, logistics, etc.) and perform effectively. These forces need compatible systems with interoperable standards, doctrine, tactics, techniques, and procedures.

To support joint and combined command and control and to enable a common relevant operational picture of the battlespace, the Department will enhance end-to-end interoperable communications for secure planning and operations. These communications will provide shared situational awareness and integration of joint fires, maneuver, and intelligence. They must be interoperable across all components and tailorable for coalition operations with other countries. The capability provided by this network and its applications will enable rapid response forces to plan and execute faster than the enemy and to seize tactical opportunities.

Standing Joint Task Force Headquarters

To strengthen joint operations, the Department will develop over the next several months proposals to establish a prototype for Standing Joint Task Force (SJTTF) Headquarters. The goal is to establish a SJTTF headquarters in

each of the regional combatant commands. The headquarters will provide uniform, standard operating procedures, tactics, techniques, and technical system requirements, with the ability to move expertise among commands.

SJTF headquarters will have a standardized joint C4ISR architecture that provides a common relevant operational picture of the battlespace for joint and combined forces. And it will have mechanisms for a responsive integrated logistics system that provide warfighters easy access to necessary support without burdensome lift and infrastructure requirements. SJTF headquarters will also utilize adaptive mission planning tools that allow U.S. forces to operate within the adversary's decision cycle and respond to changing battlespace conditions.

Standing Joint Task Forces

In addition, the Department will examine options for establishing Standing Joint Task Forces (SJTFs). SJTF organizations will focus in particular on the critical operational goals described previously. They will seek to develop new concepts to exploit U.S. asymmetric military advantages and joint force synergies. These concepts will be designed to take into account the potential to achieve significantly greater military capability at lower total personnel levels.

One option will include a plan for a SJTF for unwarned, extended-range conventional attack against fixed and mobile targets at varying depths. Such an SJTF would address one of the critical operational challenges of the future - developing the capability to continuously locate and track mobile targets at any range and rapidly attack them with precision. Overcoming this challenge will require enhanced intelligence capabilities, including space-based systems, additional human intelligence, and airborne systems that can locate and track moving targets and transmit that information to strike assets. It will require the ability to strike without warning from the air, from the sea, on the ground, and through space and cyber space. It will also require that these forces be networked to maximize their combined effects.

Establishing a Standing Joint Task Force for extended-range, unwarned conventional strike would provide the organizational means to achieve a networked capability. This Standing Joint Task Force could serve as the vanguard for the transformed military of the future. It could undertake experimental exercises as new technologies become available. It would also offer immediate operational benefits.

Joint Presence Policy

To strengthen the Secretary of Defense's management of the allocation of joint deterrent and warfighting assets from all Military Departments, the QDR calls for the establishment of a joint presence policy. This new policy would build on the existing Global Naval Forces Presence Policy, but it would also subsume the rotational overseas presence force of all military Services.

Establishing a joint presence policy will increase the capability and flexibility of U.S. forward-stationed forces and aid in managing force management risks. This policy will establish steady-state levels of air, land, and naval presence in critical regions around the world. It will synchronize deployments of U.S. forces and facilitate cross-Service trades for presence and deterrence. It will also allow for better coordination in the readiness and tempo of operations of all U.S. forces.

Sustaining the Force

To ensure the Department transforms its logistics capabilities, DoD will pursue actions to sustain the force more effectively and efficiently. Specific areas will include a dramatically improved deployment process and accelerated implementation of logistics decision support tools. DoD must also accelerate logistics enterprise integration, reduce logistics demand, and reduce the cost of logistics. In addition, conducting industrial vulnerability assessments and developing sustainment plans for the most critical weapons systems and preferred munitions will help ensure effective sustainment.

Experimenting in Support of Transformational Change

To identify the best available solutions to emerging operational challenges, the defense strategy will employ military field exercises and experiments. Over the last century, military field exercises and experiments oriented toward addressing emerging challenges and opportunities at the operational level of war have been important enablers of military innovation and transformation. These operations reduce uncertainty about the future conflict environment and future capabilities. Exercises and experiments are a critical phase in developing new types of forces and operational concepts that can respond to emerging operational challenges and dominate opponents who effectively exploit aspects of the changing security environment.

Field exercises that incorporate experimentation - at both the joint and the service levels - provide an indispensable means for solving emerging challenges. For instance, with respect to the challenge of projecting power in an anti-access environment, field exercises and experiments will enable the military to identify promising operational concepts for deploying forces into theater and conducting extended-range precision strikes against mobile targets. Further, these exercises and experiments will help to determine if secure access to forward bases is possible and to identify ways to sustain operations for a period sufficient to achieve U.S. objectives. They will also assist the United States in determining which new systems and capabilities will be required, which existing systems and capabilities should be sustained, and what combination of transformational and legacy systems should be created.

Moreover, field exercises and experiments that enable the U.S. military to create and maintain options for a variety of emerging capabilities greatly complicate the planning of would-be adversaries. By enabling the creation of a range of capabilities and warfighting options, field exercises and experimentation can compel future competitors into an unenviable choice. They can seek to develop responses to most or all of the U.S. capabilities and options and consequently stretch their limited resources thin, or they can choose the high-risk option of focusing their efforts on offsetting only one or a few of the new warfighting options, leaving themselves vulnerable to the others. When confronted with this dilemma, potential adversaries may find themselves dissuaded from entering into a military competition in the first place.

U.S. forces will rely heavily on wargames and simulations to support this program of field exercises and experiments. These important analytic tools can greatly enhance the effectiveness of field exercises by identifying promising capabilities that merit prototyping, new force elements that should be established, and operational concepts that merit the detailed evaluation that only field exercises can provide. Thus wargames and simulations serve as a filter to enhance the focus and value of field exercises. However, simulations and war games have inherent limits in terms of how far they can go in identifying new forms of operation and new military system requirements.

During the latter stages of the Cold War, the Services invested in a number of high-fidelity training facilities that greatly enhanced the value of their field training. Yet comparable facilities do not exist to support joint high-fidelity field exercises and experiments. DoD will explore the need to establish a joint and interoperability training capability, including a Joint National Training Center as well as opportunities to build on existing

capabilities at Service training centers and ranges to enable joint transformation field exercises and experiments and to inform the Services' exercises and experiments.

DoD must also undertake high-fidelity transformation exercises and experiments that address the growing challenge of maintaining space control or defending against attacks on the U.S. national information infrastructure. DoD will establish a space test range for this purpose. Enabling these kinds of exercises will be a major challenge for the Department's transformation effort.

Joint and Service field exercises oriented to military transformation have suffered from chronic resource shortages. Joint Forces Command must conduct at least one major joint transformation exercise every other year. These should build on Service experimentation exercises in the intervening years. Moreover, the regional CINCs should develop a plan to rotate assigned forces through a joint training event for regular exercises and evaluations. To support this effort, DoD will consider the establishment of a Joint Opposing Force and increasing the Joint Forces Command exercise budget. To ensure that sufficient forces are available for experimentation, Joint Forces Command will be authorized to draw up to 5 percent of U.S.-based forces each year for experimentation activities within tempo guidelines and acceptable operational risk.

The findings of this program of field exercises and experiments will feed back directly into the process for determining systems, doctrine, and force structure requirements. Monitoring this program and providing the Secretary with policy recommendations based on its findings will be an important responsibility of the work of the Director, Force Transformation.

Exploiting Intelligence Advantages

U.S. defense strategy and doctrine are increasingly dependent upon information and decision superiority. Information superiority, in turn, depends heavily upon timely, relevant, and comprehensive intelligence. Today, the United States not only possesses unique intelligence capabilities, unmatched by any potential adversary, but has numerous efforts underway to improve and expand current intelligence capabilities. At the same time, U.S. military dependence on information is unprecedented and growing. This is particularly true in light of the Department's transition to network-centric warfare.

Demands on intelligence capabilities are certain to grow. Because potential adversaries recognize the importance of information superiority

to U.S. strategy and operations, they are seeking to acquire similar capabilities. To offset U.S. conventional military capabilities, they are also pursuing asymmetric strategies including information operations, space warfare, and CBRNE weapons. These asymmetric threats pose daunting new intelligence challenges. To respond effectively, DoD will vigorously pursue new processes and procedures to better exploit existing assets while aggressively developing new technologies that offer great potential for responding to new threats and requirements. In particular, the Department will treat information operations, intelligence, and space assets not simply as enablers of current U.S. forces but rather as core capabilities of future forces.

Global Intelligence

Throughout the Cold War, the singular nature of the strategic threat from the Soviet Union provided U.S. intelligence with a remarkably stable target. Today, intelligence is required to provide political and military leaders with strategic and operational information on an increasingly diverse range of political, military, leadership, and scientific and technological developments worldwide.

Human Intelligence. Performance of HUMINT must be optimized to gain access and insights into some of the most difficult "targets," e.g., terrorist cells, hard and deeply buried targets, closed regimes, and CBRNE weapons development and deployment plans. The United States needs to enhance human intelligence capabilities and tools not only to gather better HUMINT but also to enable better positioning of technical collection systems. Finally, human intelligence reporting must be integrated into the situational awareness display that provides joint forces with battlespace visualization through the Global Command and Control System Common Operational Picture.

Emerging Technologies. The Department will vigorously pursue the development and exploitation of technologies that can significantly increase U.S. advantage in intelligence collection, analysis, and security. Some of the most promising include:

- Low-observable technologies that may be applied to collection platforms;
- Nanotechnology that may result in miniature, mobile, autonomous sensors that could penetrate the secure and remote facilities of an adversary;

- Advanced parallel processing and quantum computing to provide real-time processes, decryption, translation, and transcription of communications;
- Biometrics for tracking adversaries and providing secure authentication of individuals seeking network or facility access; and
- Commercial imagery for remote sensing of the earth.

Intelligence, Surveillance, and Reconnaissance (ISR)

DoD is pursuing investment strategies and migration plans for an integrated, cost-effective mix of unmanned aerial vehicles, manned platforms, spaceborne, maritime, and terrestrial systems responsive to future collection needs and challenges. Efforts are underway to accelerate the procurement of additional Unmanned Aerial Vehicle (UAV) platforms and sensors. Enhanced Space-based Radar (SBR) systems are also required to provide global, long-range ground moving target indicator capability to augment existing airborne capabilities. Commercial systems, especially satellite imagery, are being integrated into U.S. ISR capabilities.

Sensors. A wide range of imagery intelligence (IMINT), signals intelligence (SIGINT), and measurement and signature intelligence (MASINT) sensors are needed to respond to current and future requirements. Satellite IMINT sensors need to provide long-dwell capabilities. SIGINT payloads are needed for UAVs as well as for specialized shipboard collection sensors to capture modernized radio frequency signals from state and non-state threats. Extensive airborne SIGINT modernization efforts are needed to provide low- and high-band collection capabilities that elude currently deployed systems. MASINT's multi-disciplinary scope offers great potential. MASINT sensor development and deployment - particularly for such purposes as sampling for agents and collection against hard and deeply buried targets - is critical to maintaining U.S. military advantages.

Collaborative ISR Operations. The ISR community must move toward a collaborative enterprise to achieve more responsive support for civilian decision-makers and commanders engaged in planning and executing operations. Collaborative capabilities are needed to permit agile and adaptive strategies, plans, and operations, as well as rapid sharing of analysis and time-sensitive information. A fused information picture must provide decision-makers and commanders with a near real-time capability to support operations and visualize the operational space. Decision aids

and other tools are needed to develop a coherent strategy and plan and then to enable decision makers to adjust rapidly to emerging situations. Such systems are essential to establishing an effective, efficient, and responsive ISR posture in joint and combined operations.

Tasking, Processing, Exploitation, and Dissemination (TPED)

Future military operations will require TPED approaches that integrate all collection disciplines, including IMINT, SIGINT, MASINT, HUMINT, and open sources. Integrated TPED must accommodate new types of multimedia, multi-spectral, and multi-source information, including commercial imagery. A capability to incorporate real-time video, integrate information acquired from non-intelligence sources - such as advanced aircraft radar or commercial satellite imagery - and efficiently exploit long-dwell and stare systems is essential to meet future military requirements. Future TPED will be expected to support multiple echelons, including tactical and national systems and to operate across diverse security domains. Migrating to a more integrated architecture that takes advantage of multiple intelligence disciplines and robust networking will improve the timeliness and quality of intelligence information needed by defense-related consumers of intelligence.

As target sets become more diverse and collection sources more varied, tying this scarce and disparate information together requires trained and analytical judgment. Investments need to focus on building a workforce with the required skills, and with the analytical tools and databases needed to improve support to planning.

Developing Transformational Capabilities

A fundamental challenge confronting DoD is ensuring that U.S. forces have the capabilities they need to carry out the new defense strategy and meet the demands of the 21st century. Toward that end, it is imperative that the United States invests and transforms its forces and capabilities. The Department's commitment to modernization has three main parts:

- Exploiting research and development to ensure that U.S. forces maintain a decisive lead in technologies critical to transformation;
- Advancing key transformation initiatives; and
- Selectively recapitalizing legacy forces to meet near-term challenges and to provide near-term readiness.

Research and Development

A robust research and development effort is imperative to achieving the Department's transformation objectives. DoD must maintain a strong science and technology (S&T) program that supports evolving military needs and ensures technological superiority over potential adversaries. Meeting transformation objectives also will require new information systems. These must be married with technological advances in other key areas, including stealth platforms, unmanned vehicles, and smart submunitions. To provide the basic research for these capabilities, the QDR calls for a significant increase in funding for S&T programs to a level of three percent of DoD spending per year.

During the Cold War, U.S. government programs were a primary impetus for research into new technologies, particularly in areas such as computers and materials. Today and well into the foreseeable future, however, DoD will rely on the private sector to provide much of the leadership in developing new technologies. Thus, the Department has embarked on an effort (a) to turn to private enterprise for new ways to move ideas from the laboratory to the operating forces, (b) to tap the results of innovations developed in the private sector, and (c) to blend government and private research where appropriate. This "quiet revolution" will take advantage of science and technology and continue to provide U.S. forces with technological superiority.

In parallel with a new emphasis on research and development, DoD must give increased priority to maintaining a robust test and evaluation program, which will require test centers and ranges. While transformation offers U.S. forces the promise of revolutionary capabilities, the products of this transformation must be tested thoroughly before they are deployed. This need for testing - and particularly for testing capabilities conducted over very long distances - requires the Department to maintain and modernize highly instrumented ranges and to manage the challenges of range encroachment. A robust test and evaluation program will maximize the return on future procurement expenditures, while strengthening the public's confidence in defense acquisitions.

Transformation Initiatives

In order to advance U.S. transformation efforts, the new defense strategy identifies key operational goals for deterring conflict and conducting military operations. To improve the linkage between strategy and investments, DoD's investment resources will be focused on achieving six operational goals in the following ways:

1. *Protect bases of operation at home and abroad and defeat the threat of CBRNE weapons.*

DoD maintains many unique capabilities for mitigating and managing the consequences of terrorist attacks on American soil. The Department must be prepared to provide support to state and local authorities, if requested by the lead federal agency. DoD is enhancing its anti-terrorism and force protection programs. It is also increasing investment in chemical and biological countermeasures, including personal protection for DoD personnel. Moreover, DoD has established Weapons of Mass Destruction Civil Support Teams, composed of National Guard personnel and the Marine Corps' Chemical-Biological Incident Response Force. These teams stand ready to provide support, if directed. To improve DoD's ability to provide such support, the QDR calls for selected readiness enhancements to the Army's Reserve Component.

The continued proliferation of ballistic and cruise missiles poses a threat to U.S. territory, to U.S. forces abroad, at sea, and in space, and to U.S. allies and friends. To counter this threat, the United States is developing missile defenses as a matter of priority. Integrating missile defenses with other defensive as well as offensive means will safeguard the Nation's freedom of action, enhance deterrence by denial, and mitigate the effects of attack if deterrence fails. The ability to provide missile defenses in anti-access and area-denial environments will be essential to assure friends and allies, protect critical areas of access, and defeat adversaries. DoD must be prepared to provide near-term capabilities to defend against rapidly emerging threats and more robust capabilities that evolve over time.

DoD has refocused and revitalized the missile defense program, shifting from a single-site "national" missile defense approach to a broad-based research, development, and testing effort aimed at deployment of layered missile defenses. These changes in the missile defense program will permit the exploration of many previously untested technologies and approaches that will produce defenses able to intercept missiles of various ranges and in various phases of flight. These defenses will help protect U.S. forward-deployed forces. Moreover, they will provide limited defense against missile threats not only for the American people, but also for U.S. friends and allies.

2. *Assure information systems in the face of attack and conduct effective information operations.*

Information operations provide the means to rapidly collect, process, disseminate, and protect information while denying these capabilities to adversaries. Such operations provide the capability to influence perceptions, perform computer network defense and attack missions, conduct electronic warfare, and carry out other protective actions. Information operations represent a critical capability enhancement for transformed U.S. forces.

The QDR highlights both the imperative for the United States to maintain an unsurpassed capability to conduct information operations, as well as the need to strengthen U.S. capabilities in these areas. DoD must also develop an integrated approach to developing information system requirements, acquiring systems, and programming for the force of tomorrow. The ability to conduct information operations has become a core competency for the Department.

3. *Project and sustain U.S. forces in distant anti-access and area-denial environments.*

The defense strategy rests on the assumption that U.S. forces have the ability to project power worldwide. The United States must retain the capability to send well-armed and logistically supported forces to critical points around the globe, even in the face of enemy opposition, or to locations where the support infrastructure is lacking or has collapsed. For U.S. forces to gain the advantage in such situations, they must have the ability to arrive quickly at non-traditional points of debarkation to mass fire against an alerted enemy and to mask their own movements to deceive the enemy and bypass its defenses. Consequently, DoD must carefully monitor attempts by adversaries to develop capabilities that could detect and attack U.S. forces as they approach conflict areas or hold at risk critical ports and airbases with missiles and CBRNE attacks.

The QDR emphasizes the need for new investments that would enable U.S. forces to defeat anti-access and area-denial threats and to operate effectively in critical areas. Such investments will include: addressing the growing threat posed by submarines, air defense systems, cruise missiles, and mines;

accelerating development of the Army Objective Force; enhancing power projection and forcible entry capabilities; defeating long-range means of detection; enabling long-range attack capabilities; enhancing protection measures for strategic transport aircraft; and ensuring U.S. forces can sustain operations under chemical or biological attack.

4. *Deny enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement.*

Likely enemies of the United States and its allies will rely on sanctuaries-such as remote terrain, hidden bunkers, or civilian "shields" - for protection. The capability to find and strike protected enemy forces while limiting collateral damage will improve the deterrent power of the United States and give the President increased options for response if deterrence fails. Such a capability would not only reduce the likelihood of aggression, but would offer the National Command Authorities the ability to respond immediately in the event of hostilities.

Achieving this objective will require investments in a wide range of cross-Service programs. Investments in intelligence, surveillance, and reconnaissance (ISR) initiatives must be bolstered. Also emphasis must be placed on manned and unmanned long-range precision strike assets, related initiatives for new small munitions, and the ability to defeat hard and deeply buried targets.

DoD will accelerate the conversion of Trident submarines to guided missile submarines. DoD will procure unmanned combat aerial vehicles and intelligence, surveillance, and reconnaissance unmanned aerial vehicles such as Global Hawk. The Department will also increase procurement of precision weapons.

Special Operations Forces will need the ability to conduct covert deep insertions over great distances and will need enhanced C4ISR capabilities to remain in contact with their commanders and to ensure access to real-time intelligence in a number of forms. These capabilities will enable Special Operations Forces to access additional communication, intelligence, and firepower assets in support of their missions deep in hostile environments and to aid in the reduction of friendly losses and casualties. These capabilities will also

enhance the strategic and operational agility of Special Operations Forces.

5. *Enhance the capability and survivability of space systems.*

Because many activities conducted in space are critical to America's national security and economic well being, the ability of the United States to access and utilize space is a vital national security interest. During crisis or conflict, potential adversaries may target U.S., allied, and commercial space assets as an asymmetric means of countering or reducing U.S. military operational effectiveness, intelligence capabilities, economic and societal stability, and national will. Ensuring the freedom of access to space and protecting U.S. national security interests in space are priorities for the Department.

The mission of space control is to ensure the freedom of action in space for the United States and its allies and, when directed, to deny such freedom of action to adversaries. As the foundation for space control, space surveillance will receive increased emphasis. DoD will pursue modernization of the aging space surveillance infrastructure, enhance the command and control structure, and evolve the system from a cataloging and tracking capability to a system providing space situational awareness.

In recognition of the high-technology force multipliers provided by space systems, the QDR places increased emphasis on developing the capabilities to conduct space operations. Ensuring freedom of access to space and protecting U.S. national security interests are key priorities that must be reflected in future investment decisions.

6. *Leverage information technology and innovative concepts to develop interoperable Joint C4ISR.*

Information technology will provide a key foundation for the effort to transform U.S. armed forces for the 21st century. The recent U.S. experience in Kosovo underscored the need for high-capacity, interoperable communications systems that can rapidly transmit information over secure, jam-resistant datalinks to support joint forces. In the near future, the United States

must also develop alternatives capable of overcoming current and projected bandwidth constraints. The Department must stay abreast of the new communications landscape and leverage it to maximize U.S. advantages in this area.

Future operations will not only be joint, but also include Reserve Components, civilian specialists, and other federal agencies and state organizations. Most likely they will involve a coalition effort with other countries. The effectiveness of these operations will depend upon the ability of DoD to share information and collaborate externally as well as internally. Interoperability, which enables joint and combined operations, is a key element in all DoD operational and systems architectures. It must include the ability to overcome language and cultural barriers. Experience shows that fixing systems after the fact to achieve interoperability is typically costly and often fails to satisfy mission requirements and creates security problems. The better approach is to incorporate interoperability at the outset in designing new systems. However, the Department will continue its efforts, where cost effective, to bring its legacy systems up to interoperability standards.

Based on QDR deliberations, funding will be focused on achieving end-to-end Command, Control, Communication, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities. An integrated joint and combined C4ISR capability is necessary to ensure that accurate and relevant information can be gathered swiftly from various sources and then securely transmitted to forces and their commanders. Improving communications must be a priority for U.S. conventional, special operations, and strategic forces. Information technology offers U.S. forces the potential of conducting joint operations more effectively, with smaller forces and fewer weapon systems.

To achieve these operational goals, the Defense Department must transform military training. Three basic tenets describe the changes the Department will implement to transform training in parallel with the transformation of its missions and forces:

- Reverse the erosion of DoD's training range infrastructure and ensure that ranges are sustainable, capable, and available;
- Revise acquisition and logistics policies and procedures to

emphasize training and the timeliness of fielding modern, fully capable training systems; and

- Use distributed learning technologies to reengineer individual training and job performance.

Recapitalization of the Department's Legacy Forces

The Department of Defense is committed to transforming its forces to meet future challenges. This transformation will be conducted in a timely but prudent manner. In particular, prudence dictates that those legacy forces critical to DoD's ability to defeat current threats must be sustained as transformation occurs. Consequently, while emphasizing transformation, DoD will also selectively recapitalize legacy forces. This effort will be a challenge because recapitalization of all elements of U.S. forces since the end of the Cold War has been delayed for so long. As the force aged throughout the 1990s, few replacements were procured. Without a significant effort to increase resources devoted to recapitalization of weapons systems, the force structure will not only continue to age but, perhaps more significantly, become operationally and technologically obsolete.

The need to recapitalize is evident from the rising age of the current force structure, particularly tactical aircraft. On average, the age of Air Force air superiority aircraft now stands at almost 20 years, an unprecedented level. The multi-role fleet will continue to age as well, with its average age projected to reach 20 years in the coming decade. The situation with other platforms, while not as dramatic as that of tactical aircraft, is also problematic. Overall, there is an imperative need for recapitalization of legacy systems by replacement, selected upgrade, and life extension.

Recognizing this imperative, the Department plans to pursue selective upgrades to systems such as Abrams tanks, B-1 bombers, Navy ship self-defense, and amphibious assault vehicles to sustain capabilities critical to ensuring success in any near-term conflict.



DoD must overcome trends of the past to sustain a balanced defense program that maintains near-term readiness without mortgaging the long-term capabilities of the force. To support this goal, DoD is committed to identifying efficiencies and reductions in less relevant capabilities that can free resources to be reinvested to accelerate the Department's transformation efforts. The Military Departments and Defense Agencies will identify significant, auditable savings to be reinvested in high-priority transformation initiatives.

In light of the markedly increased requirements associated with the unfolding U.S. war against terrorism, prior estimates of available resources for defense are no longer accurate. Before the September 2001 attacks, DoD had planned for gradual increases in defense spending accompanied by roughly corresponding increases in available resources realized through internal efficiencies. At this juncture, the Defense Department is developing new estimates of needed funding, in line with emerging, new military requirements. At the same time, it is critical that DoD's efforts to realize internal efficiencies not be relaxed, as any increased funding will be urgently needed to meet the Nation's new defense demands.

VI. REVITALIZING THE DOD ESTABLISHMENT

The need to transform America's military capability encompasses more than strategy and force structure. Transformation applies not just to what DoD does, but how DoD does it. During the same period that the security environment shifted from a Cold War structure to one of many and varied threats, the capabilities and productivity of modern businesses changed fundamentally. The Department of Defense has not kept pace with the changing business environment.

A transformed U.S. force must be matched by a support structure that is equally agile, flexible, and innovative. It must be a structure in which each of DoD's dedicated civilian and military members can apply their talents to defend America - where they have the resources, information, tools, training, and freedom to perform.

Transforming DoD's outdated support structure is a key step in achieving a more capable fighting force.

- DoD maintains between 20 and 25 percent more facility infrastructure than needed to support its forces - at an annual excess cost of \$3 to \$4 billion.
- DoD's financial systems are decades old and not well interconnected, and accounting and auditing processes would struggle to meet the standards of generally accepted accounting principles.
- DoD's business processes and regulations seem to be engineered to prevent any mistake. By doing so, these regulations often discourage taking any risk.

An infrastructure that needs to be streamlined to match the new reality, financial systems that limit the ability to see and manage the enterprise, and processes that discourage action and reasonable risk at the working level are hallmarks of a mature enterprise that must be transformed. While America's business have streamlined and adopted new business models to react to fast-moving changes in markets and technologies, the Defense Department has lagged behind without an overarching strategy to improve its business practices.

To redress this situation and lead the Defense Department's revitalization process, the DoD has established the Senior Executive Council (SEC) led by the Deputy Secretary of Defense and consisting of the Service Secretaries, and the Under Secretary of Defense for Acquisition, Technology and Logistics. The SEC will steer the Defense Department through what will be a challenging period of change. The Defense Department has also created a Defense Business Practices Implementation Board to tap outside expertise as the Department moves to improve its business practices.

To focus these efforts, the Defense Department will institute programs to improve its performance in the following areas:

- Encourage talent to enter and stay in the military and civilian service; and
- Modernize DoD business processes and infrastructure.

Encourage Talent to Enter and Stay in the Military and Civilian Service

Skilled, talented, and motivated people are the foundation of a leaner, more flexible support structure. Improving the skills of the existing workforce and recruiting, retaining, training, and educating new people must be a top priority. Many of the skills the Department needs are the same ones most in demand in the private sector. The Department must forge a new compact with its warfighters and those who support them - one that honors their service, understands their needs, and encourages them to make national defense a lifelong career.

Accomplishing this management imperative will require strong leadership and innovative thinking about how to attract, motivate, and compensate the workforce. It will require new rules for hiring and managing personnel. It will also require increased interaction with the private sector to ensure that the flow of people and knowledge between both sectors is enhanced.

Toward this end, DoD will develop a strategic human resources plan for military and civilian personnel. This strategy will identify the tools necessary to size and shape the military and civilian force to provide adequate numbers of high-quality, skilled, and professionally developed people.

In recognition of the changing demographics of DoD's military families and the changes that will be initiated as a result of this review, DoD will also review existing quality of life services and policies to guarantee that they have kept pace with modern requirements. The Government also needs to ensure that it fulfills its responsibility to fund quality programs required to sustain the force. Further, the Department will address the need to manage personnel tempo and improve military housing.

To create a world class health system, DoD has initiated a comprehensive review of all Defense and Service health agencies, management activities, and programs; and strengthened the TRICARE system to ensure better management and accountability. A coordinated, integrated, and adequately resourced health care system with an improved organizational structure will ensure the availability of contingency medical capabilities for active forces. It also will administer medical benefits to dependents and retirees in order to meet the needs of the force and expectations of the broader Service family.

The need to attract, develop, and retain civilian personnel is just as important. Many of the advances in private sector human resources management have not been incorporated into the DoD civilian personnel system. For civilian personnel, the human resources approach will include:

- Modernized recruiting techniques;
- More flexible compensation approaches;
- Enhanced training and knowledge management; and
- Career planning and management tools.

Modernize DoD Business Processes and Infrastructure

The Department of Defense must transform its business processes and infrastructure to both enhance the capabilities and creativity of its employees and free up resources to support warfighting and the transformation of military capabilities.

To accomplish this, DoD's organizational structure will be streamlined and flattened to take advantage of the opportunities that the rapid flow of data and information present. As in business, entire functions need to be

eliminated. Boundaries must be broken to accelerate change across the entire organization, promote cooperation, share information and best practices, and institutionalize change throughout the Department. In both the organizational structure and the military culture, DoD must find ways to encourage and reward innovation and risk-taking among fighting forces as well as support personnel.

On the support side, the task is to remove layers that no longer provide value added. To accomplish this, the Department will initiate efforts in the following areas:

- Streamline the overhead structure and flatten the organization;
- Focus DoD "owned" resources on being excellent in those areas that contribute directly to warfighting;
- Modernize the DoD-wide approach to business information; and
- Consolidate and modernize base infrastructure.

Streamline the overhead structure and flatten the organization.

The Department of Defense is committed to reducing all of its headquarters staffs by 15 percent from FY1999 baseline as specified in section 921(b) of the FY2000 National Defense Authorization Act. DoD is currently developing a plan to comply with this goal. In light of emerging, new requirements associated with the U.S. war on terrorism, any savings realized from such reductions would assist the Department in meeting higher-priority needs.

The Department must also align, consolidate, or differentiate overlapping functions of the Office of the Secretary of Defense, the Services, and the Joint Staff. To do this, DoD will develop recommendations to eliminate redundancy.

The military departments also are evaluating changes in their headquarters structures to improve their ability to perform executive functions at lower staffing levels.

Two major institutional processes - the planning, programming and budgeting system (PPBS) and the acquisition process - create a significant amount of the self-imposed institutional work in the Department. Simplifying these processes will support a streamlining of the entire organization. The Department has already taken the first step by conducting a concurrent program and budget review. DoD will explore options to fully redesign the way it plans, programs, and budgets. DoD has

already begun streamlining the Defense Acquisition Board (DAB) process, including reducing funding for acquisition-related studies and analyses by 10 percent and eliminating 31 of 72 acquisition-related advisory boards.

The goal throughout this set of initiatives is to reduce the complexity of the Department of Defense, which has been driving the increase in the relative size of the overhead structure. In fact, the goal will be to increase measurably the tooth-to-tail ratio over the next five years. DoD will measure success by comparing the headquarters personnel totals to dollars spent on headquarters and headquarters personnel versus warfighting forces.

Focus DoD "owned" resources on excellence in those areas that contribute directly to warfighting. Only those functions that must be performed by DoD should be kept by DoD. Any function that can be provided by the private sector is not a core government function. Traditionally, "core" has been very loosely and imprecisely defined and too often used as a way of protecting existing arrangements.

Over the last several decades, most private sector corporations have moved aggressively away from providing most of their own services. Instead they have concentrated efforts on core functions and businesses, while building alliances with suppliers for a vast range of products and services not considered core to the value they can best add in the economy. The Department has experimented with this business practice with some success (e.g., providing vertical replenishment at sea, oilers manned by civilians, or food and other services in forward deployed areas). Aggressively pursuing this effort to improve productivity requires a major change in the culture of the Department.

DoD will assess all its functions to separate core and non-core functions. The test will be whether a function is directly necessary for warfighting. The review will divide these functions into three broad categories:

- Functions directly linked to warfighting and best performed by the federal government. In these areas, DoD will invest in process and technology to improve performance.
- Functions indirectly linked to warfighting capability that must be shared by the public and private sectors. In these areas, DoD will seek to define new models of public-private partnerships to improve performance.

- Functions not linked to warfighting and best performed by the private sector. In these areas, DoD will seek to privatize or outsource entire functions or define new mechanisms for partnerships with private firms or other public agencies.

The Department has already taken steps to outsource and shed non-core responsibilities, including the privatization of military housing and the privatization of utility services for military installations. In addition, DoD will create a small team to develop alternatives to the Agency or Field Activity model that permits the Department to produce cross-DoD outputs at a significantly lower cost.

Defense Agencies. Over time, the Defense Agencies have served to consolidate functions common to the Services. This process has resulted in better, more integrated outputs and has helped to modernize the Department's business processes. To improve the business practices of the Defense Agencies, DoD will begin a review of the Agencies to seek efficiencies. Transformation roadmaps for Defense Agencies will be developed keyed toward agencies planned contributions to helping DoD meet the critical operations goals outlined earlier.

Defense Working Capital Fund. DoD will develop a plan for improving the effectiveness of the Defense Working Capital Fund. The fund was created as a pricing mechanism for the military services to procure goods and services from Defense Agencies. The notion of paying for outputs is right minded. However, the Fund mechanism subsumes a number of elements in its pricing mechanism (for example, the expected cost of mobilization), which masks the peacetime cost of outputs.

Modernize the DoD-wide approach to business information. Today's technology makes the accurate, timely flow of information possible. Pushing this information down will enable decision-making at the right level and will, in turn, support the flattening and streamlining of the organization. DoD must keep its information, communication, and other management technologies on a par with the best, proven technologies available.

The Department's business activities include financial as well as non-financial operations and systems. Non-financial business operations and systems include those that support the acquisition, medical, maintenance, transportation, property, inventory, supply, and personnel communities. However, the Department's financial and non-financial operations and systems do not work together effectively to produce the most desirable

business management information. Correcting this deficiency will require a broad set of initiatives.

DoD will create a Department-wide blueprint (enterprise architecture) that will prescribe how the Department's financial and non-financial feeder systems and management processes will interact. This architecture will guide the development of enterprise-level processes and systems throughout DoD.

Regular periodic consultation with the U.S. Comptroller General has been initiated to gain insight and support for improving the Defense Department's financial processes. DoD will also continue to work with Congress to better coordinate financial management oversight activities.

Consolidate and modernize DoD facility infrastructure. Currently, DoD has 20 to 25 percent more facility structure than it needs to support its forces. Due to budget constraints over the last decade, much of that infrastructure has begun to age beyond acceptable levels. Dollars that could be spent on more urgent transformation priorities are being used to maintain installations that may no longer be needed.

To reduce waste and inefficiencies, facilities must be restructured to support multi-Service missions. In July 2001, the Department announced an Efficient Facilities Initiative (EFI). EFI will enable the U.S. military to match facilities to forces, meet the threats and challenges of a new century, and make the wisest use of limited defense dollars. EFI ensures the primacy of military value in making decisions on facilities and harnesses the strength and creativity of the private sector by creating partnerships with local communities. All military installations will be reviewed, and recommendations will be based on the military value of the facilities and the structure of the force.

The EFI will encourage a cooperative effort between the President, the Congress, and the military and local communities to achieve the most effective and efficient base structure for America's Armed Forces. It will give local communities a significant role in determining the future use of facilities in their area by transferring closed installations to local redevelopers at no cost (provided that proceeds are reinvested) and by creating partnerships with local communities to own, operate, or maintain those installations that remain.

Consolidating facilities will focus funds on facilities that are actually needed and help to reduce the recapitalization rate of those that remain to

a level closer to DoD's goal of 67 years. Consolidation will also save an estimated \$3.5 billion annually.

Compress the Supply Chain. American businesses have achieved some of their greatest efficiencies and savings by reforming their supply chain processes to remove steps, reduce inventories, and cut costs. By scrubbing their warehousing, distribution, and order fulfillment processes, they have cut out "non-value-added" steps. The Department has made some recent advances in reducing inventories of common consumable items and in promoting practices like direct vendor deliveries. However, DoD still maintains large inventories that could be substantially reduced by applying an array of supply chain practices. This could include use of industrial partners responsible for life cycle support of a weapon system or commodity item. DoD also incurs significant overhead costs for functions that vendors could perform. Performance-Based Logistics and modern business systems with appropriate metrics can eliminate many of these non-value-added steps. DoD will implement Performance-Based Logistics to compress the supply chain and improve readiness for major weapons systems and commodities.

Reduce Cycle Time. Every reduction in cycle time brings improvements in efficiency and reductions in cost. Industry has figured out how to get their average delivery time down to 24 to 48 hours; the government customer should get the same or better from the government supplier. Private sector benchmarks should set the standard for government providers, whether the function is processing and paying a bill, moving a part from a supply center or depot to a field unit, or making the transformation from concept to employment.

VII. MANAGING RISKS

Managing risk is a central element of the defense strategy. It involves balancing the demands of the present against preparations for the future consistent with the strategy's priorities. It entails assuring allies and friends, deterring threats of coercion and aggression, and, when necessary, defeating adversaries. It involves maintaining military advantages and developing new military competencies while dissuading future military competitors.

Over the past 60 years, the United States has spent an average of 8 percent of the Gross Domestic Product (GDP) on defense; in 2001, 2.9 percent of GDP was spent on defense. The tendency to reduce spending in periods with no clear or well-defined threat has the potential effect of creating risks by avoiding or delaying investment in the force. Consequently, an assessment of the capabilities needed to counter both current and future threats - across the spectrum of military challenges - must be included in the Department's approach to assessing and mitigating risk.

A New Risk Framework

DoD has developed a new, broad approach to risk management. The new risk framework ensures that the Defense establishment is sized, shaped, postured, committed, and managed with a view toward accomplishing the defense policy goals outlined in this report.

This risk framework is made up of four related dimensions:

- Force management - the ability to recruit, retain, train, and equip sufficient numbers of quality personnel and sustain the readiness of the force while accomplishing its many operational tasks;
- Operational - the ability to achieve military objectives in a near-term conflict or other contingency;
- Future challenges - the ability to invest in new capabilities and develop new operational concepts needed to dissuade or defeat mid- to long-term military challenges; and

- Institutional - the ability to develop management practices and controls that use resources efficiently and promote the effective operation of the Defense establishment.

This framework allows the Department to consider tradeoffs among fundamental objectives and fundamental resource constraints, and it reflects DoD's experiences over the last decade in attempting to balance strategy, force structure, and resources. By assessing the Defense establishment in these four areas, the Department is directly addressing the issues associated with developing and assessing the operational force, key enabling capabilities, and its supporting deployment and industrial infrastructure.

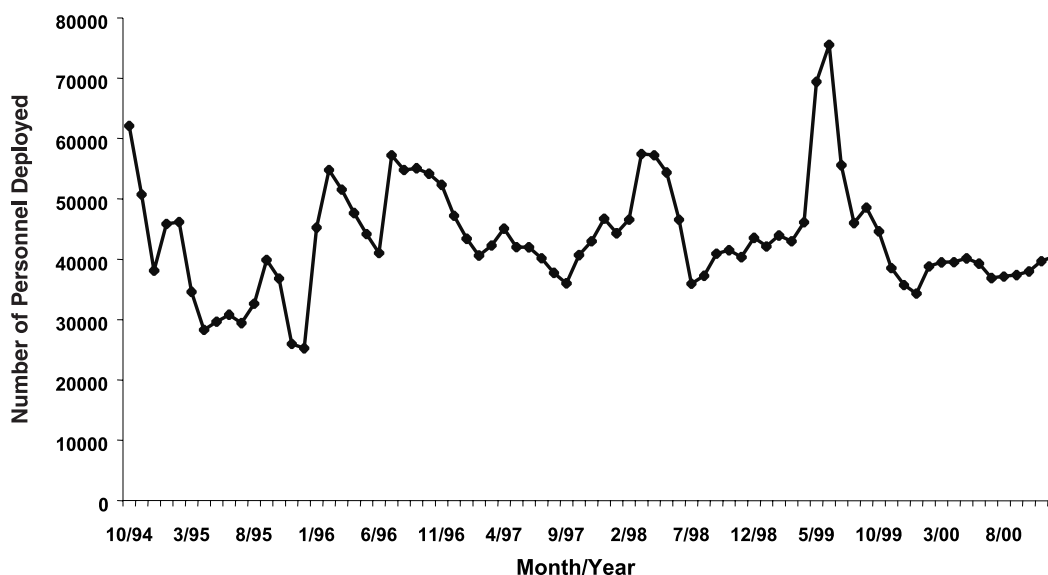
Force Management Risks

DoD must always be able to meet its missions. It must deploy forces to assure friends and deter potential adversaries; it must acquire new capabilities to dissuade potential enemies from challenging U.S. interests; and, if necessary, it must defeat foes in combat. All of these risks require members of the military force to risk their lives at home and abroad for extended periods of time.

However, the Department should not expect its people to tolerate hardships caused by inequitable or inappropriate workloads within the force, aging and unreliable equipment, poor operational practices, and crumbling infrastructure. Consequently, this strategy requires explicit measurement and control of force management risk.

As an illustration, the figure below depicts the number of active duty military personnel deployed to various operations from November 1994 through December 2000. The figure shows large variations in the number of personnel deployed during this period, which coincided with substantial reductions in active-duty deployable forces. In addition, the use of reserve forces increased from eight million to 12 million man-days per year. The bulk of the deployment burden during this time was not spread among the entire force, due in part to the belief that the deployments were temporary and that permanent changes in rotational procedures and forward presence were not required. Prior to the end of 1994, the Department did not even collect data at the Joint level on the number of deployed personnel. DoD must better control this turbulence and manage its effects.

**Active Duty Personnel Deployed to Contingency Operations,
1994-2000**



Note: Graph does not include forward-based forces.

U.S. military involvement in operations throughout the 1990s revealed substantial shortages of certain types of forces. In response to these shortages, the Department instituted force management mechanisms. These included the Global Naval Forces Presence Policy (GNFPP) to allocate the peacetime presence of naval assets across warfighting theaters and the Global Military Force Policy (GMFP) to manage demand for LD/HD assets, such as key surveillance and reconnaissance platforms. DoD will seek to expand these policies by developing a Joint Presence Policy.

Mitigating Force Management Risks: Tempo Standards and Rotational Base. DoD can no longer solely rely on such "lagging" indicators as retention and recruiting rates to detect personnel problems; by the time those indicators highlight a problem, it is too late. Nor can DoD delay necessary action to address growing force management risk due to high personnel tempo.

Toward these ends, DoD has committed to developing realistic tempo standards and limitations to control explicitly the amount of time DoD personnel are deployed away from home station or stationed outside the United States. These standards will help the Department maintain personnel tempo at acceptable peacetime levels. More importantly, DoD has made the overseas posture of U.S. military forces a principal

component of force design. The QDR analyzed the relationships between forward-stationed and rotational forces. As a result, DoD is developing more effective ways to compute the required "rotational base" across various types of forces to support forward posture. DoD will also implement a Joint Presence Policy to ensure that all elements of the force are considered in the development of rotational presence requirements. Adopting these principles for force design and management should greatly decrease force management risk.

Operational Risks

DoD's new force planning approach recognizes the need to size U.S. military forces not only for the most demanding near-term warfighting tasks, but also for a plausible set of other near-term contingencies, including small-scale contingencies. Consequently, all measurements of operational risk will reflect the full range of capabilities U.S. forces must possess and missions that U.S. forces must perform.

In the past, major elements of the forces were designed and evaluated against a narrow set of military missions and associated tasks. With a wider set of missions and tasks, the measurement of operational risk will consider both the missions that forces were designed to accomplish, and those that they are currently assigned to conduct.

Mitigating Operational Risks: Force Structure Priorities, Forward Posture, and New Readiness Measurements. The QDR has developed a broader approach to operational risk that involves assessing the Department's ability to perform the following:

- Defend the United States;
- Deter forward in critical areas;
- Swiftly defeat aggression in overlapping major conflicts; and
- Conduct a limited number of small-scale contingencies.

Promoting the defense of the United States to the top priority restores its primacy and better allows the Department to focus and prioritize its efforts to mitigate operational risk.

This approach requires analysis of a broader range of contingencies to determine operational risk than the Department has traditionally analyzed. While instituting such an approach to operational risk management requires a considerable expansion of DoD's previous

process, it directly addresses the importance of assessing the force's adequacy for a wider range of near-term operations. To this end, DoD will undertake a comprehensive re-engineering of its current readiness reporting system. The new system will allow measurement of the adequacy of the force to accomplish all its assigned missions, not just major combat operations. Such a system will also help the Department identify - and transform - force elements that are less relevant to the full spectrum of missions and tasks.

Planning for a wider range of contingencies affects recent assessments conducted by the Department. In particular, a major study of the size and shape of the Department's airlift, sealift, and pre-positioned equipment was completed in FY2000, but was based on the previous defense strategy. The mix of new threats and missions that DoD will consider in the near- to mid-term requires the Department to reevaluate this study in detail and adjust the results as necessary.

Finally, rather than equating risk mitigation with additional force structure, the new strategy calls for assessing changes in capabilities, concepts of operations, and organizational designs to help reduce risk. For instance, contingencies involving adversaries armed with CBRNE weapons, as well as ballistic missiles and artillery to deliver them, impose high risks for U.S. and allied militaries regardless of the size of the force amassed against them. In those instances, risk mitigation is more dependent on the decisions taken to pursue offensive and defensive systems and to develop new concepts of operations to deal with those threats than on increases in force structure.

Future Challenges Risks

Despite the strains on U.S. military forces during the past decade, the U.S. military has conducted its operations superbly. Nonetheless, the United States cannot take its recent successes for granted or mistakenly assume that no other nation or group will seek to challenge the United States in the future. The attacks of September 2001 demonstrate that the risks of future challenges are a permanent feature of the international system.

While the United States cannot predict with confidence which adversaries will pose threats in the future, the types of military capabilities that will be used to challenge U.S. interests and U.S. military forces can be identified and understood. As in the September terror attacks in New York and Washington, future adversaries will seek to avoid U.S. strengths and attack U.S. vulnerabilities, using asymmetric approaches such as terrorism,

information operations, and ballistic and cruise missile attacks. The President has directed the Department to transform to meet such emerging challenges. As discussed earlier, DoD has identified critical operational goals to focus the Department's transformation on such priority areas.

Assessing future challenges risk provides a measure of the ability to meet the transformational challenges described above in the mid-term and longer-term. It also recognizes that the desired capabilities and missions for the Armed Forces will change over time, and it provides a bridge to the future by institutionalizing the shift from a threat-based to capabilities-based paradigm. It provides a way to monitor how DoD balances the needs to preserve long-term military preeminence and address short-term priorities.

Future challenges risk not only addresses possible future threats, but also the ability to meet critical transformational challenges. For example, the decision not to pursue a new technology due to the lack of a current threat entails risk: introducing it early provides a military advantage for a time, and it may dissuade any potential adversary from pursuing similar capabilities.

Mitigating Future Challenge Risks: Experimentation, R&D, and Selective Procurement. Achieving DoD's strategic goals mandates embarking on the long-term transformation of U.S. military capabilities. It requires a substantial investment in explicit searches for new and improved capabilities. These capabilities may derive from innovative operational concepts, advanced systems, new organizational arrangements, and enhanced training. To achieve these ends, DoD will expand experimentation efforts under the leadership of Joint Forces Command. The Department will experiment with new forces and organizations - including new joint task force organizations - to address those operational challenges identified previously. In particular, the possible establishment of a Joint National Training Center, a space test range, and a Joint "opposing force" for training are intended to help mitigate future challenges risk via expanded experimentation.

Complementing this focus on experimentation will be a new DoD emphasis on concept development - that is, new ways to use existing and proposed forces. One advantage of the transition to Standing Joint Task Force organizations is an ability to provide more opportunities for joint and combined experiments and exercises, both to discover existing weaknesses and exploit emerging opportunities.

The Department also recognizes the value of stable investment in science and technology to identify new defense technologies. DoD plans to stabilize investment in science and technology at three percent of the defense budget for FY03-07.

The Department plans to reduce the time required to introduce new concepts and systems into the fielded force. The time between design and deployment for major DoD systems has doubled since 1975. Some of the delay can be attributed to the custom of making decisions program by program, rather than mission area by mission area. This practice leads to mere substitution of new weapons for existing ones, rather than a broader, system-level transformation. DoD's new approach will serve to hasten and integrate decision processes, as DoD plans to make selective procurement decisions within the transformation framework described by this report. Thus, the Department will reduce future challenges risk by assessing the contributions of combinations of options in each transformation area.

The Department has already committed to many transformation initiatives, as discussed in Section V. Initiatives in counterterrorism, missile defense, advanced weapons, and information operations are examples of programs that are underway to reduce future challenges risk.

Institutional Risks

The final dimension of risk is aimed at making the best use of the Department's resources in the day-to-day operations of the Defense establishment. By formally addressing institutional risk, the Department aims to maximize the efficient use of defense expenditures to sustain long-term public support for the Nation's defense needs. To manage DoD efficiently, the Defense establishment needs to be transformed - how it operates internally, how it deals with its industrial suppliers, and how it interacts with the Congress. Currently, DoD leaders manage under a set of controls that do not allow them to operate with the freedom necessary to transform the force. DoD recognizes that it must explicitly reduce these institutional risks to better manage the Defense establishment.

Mitigating Institutional Risk: Changes in DoD Operating Practices. One of the primary objectives in reducing institutional risk is the restoration of vitality in the Defense establishment. In particular, the military and civilian personnel systems merit serious examination. Consequently, DoD will develop a strategic human resources plan to help size and shape the Department's personnel for the new strategy. This plan

will not only examine ways to ensure that DoD personnel have the necessary critical skills, but it will also examine the balance of personnel and work among the active, reserve, and civilian workforces.

DoD will work to achieve a transformation in business practices, with a particular emphasis on financial management. It will develop a new financial management architecture to guide the modernization of these practices.

DoD has also committed to a substantial streamlining and upgrading of its infrastructure. The Department needs another round of infrastructure reductions to reduce unneeded facilities. DoD has adopted a goal of achieving a 67-year recapitalization rate for 80 percent of current infrastructure by 2010, as specified in the Efficient Facilities Initiative. Currently, DoD recapitalization rates average 192 years.

In addition to the longer-term initiatives listed above, the Department is taking steps to reduce institutional risk immediately. An important managerial change is the establishment of the Senior Executive Council (SEC), which will conduct a comprehensive review of the Defense Agencies. In addition, the Department has already begun streamlining the processes associated with the Defense Acquisition Board (DAB) and the Planning, Programming, and Budgeting System (PPBS), as discussed in Section VI.

Mitigating Risks Across the Spectrum

These four dimensions of risk cannot be assessed and managed independently. As noted previously, increasing near-term risk in one area, such as force management risk, would most likely affect another area, such as operational risk. Maintaining a strategy-driven balance among the four dimensions of risk is essential, and that balance must be sustained and, where necessary, adapted over time.

Adopting this risk framework is not the end but just the beginning of the Department's effort to assess and manage risk. DoD has practiced risk management in the past, but by specifying this new strategy-driven risk management framework, the Department has begun to develop a management tool that will enable greater focus on the implementation of the QDR defense program. DoD has already committed to the risk mitigation steps discussed above to reduce risk in areas that have been well documented. The broader commitment to measure and balance risk

using this framework requires extensive revisions to the readiness measurement system and development of new mechanisms to address the other risks. When implemented, these mechanisms will provide the needed assessments across all dimensions of risk.

VIII.

STATEMENT OF THE CHAIRMAN OF THE JOINT CHIEFS OF STAFF

Introduction. The 2001 Quadrennial Defense Review (QDR) faced two challenging tasks. First, it had to address significant concerns regarding the near-term ability of the force to protect and advance U.S. interests worldwide in a dangerous and evolving security environment. Second, it had to implement the President's goal of transforming the Armed Forces to meet future security challenges. In my view, the defense strategy and program recommendations contained in the QDR report are a major step toward accomplishing these two tasks, while balancing the associated near-, mid-, and long-term risks.

Over the past decade, our response to the strategic environment has placed a wide range of demands on the U.S. military. Increases in missions and requirements coupled with decreases in structure and procurement have stretched elements of the force and resulted in imbalance between strategy, force structure, and resources. Against this backdrop, on September 11, 2001, enemies of the U.S. demonstrated the capability to carry out large-scale, non-conventional attacks against the U.S. homeland; asymmetric attack against the sovereignty of the U.S. became a reality. While the QDR sets the broad direction for transforming to meet the defense demands of the future, there remains a need for a more comprehensive roadmap that will sustain the tenuous balance between strategy and resources.

Assessment of the QDR. In my view the defense strategy outlined in the QDR 2001 - if matched with resources over time - will adequately address the current and emerging challenges of the strategic environment. The goals of the strategy recognize that the military will continue to generate forces to conduct a wide range of missions for the foreseeable future. Particularly noteworthy, the QDR calls for the capability to respond to overlapping major crises and defeat adversaries or their efforts in more than one region. In my view, maintaining a credible military capacity to respond to multiple crises worldwide is absolutely fundamental to America's global leadership role.

The broad range of military requirements identified in the QDR lays the foundation for determining the size and structure of the force. The

recommendations of the review are the starting point for determining how best to organize, man, train and equip the Total Force. An initial look at the force structure indicates the current force is capable of executing the new defense strategy with moderate risk. Considerably more warfighting analysis on a range of scenarios must be done, however, to confirm this initial assessment.

First and foremost, end strength sufficient to meet strategic requirements at a sustainable OPTEMPO and PERSTEMPO must be maintained, or our greatest military asset - quality people - will be placed at risk. I believe that sustaining an end strength and force structure capable of executing the new defense strategy at moderate risk will be a significant challenge. The Services must balance limited resources between the significant QDR transformation and quality of life priorities and the competing requirements for operations and maintenance, recapitalization, and modernization beginning with their FY03 budgets. Of particular concern are rapidly aging weapon systems. While we have successfully raised annual procurement spending to the \$60 billion level, some estimates point to spending \$100 to \$110 billion per year to sustain today's force structure and arrest the aging problem. If this requirement is met by diverting resources from current operations accounts, then near-term and, eventually mid-term, military risk will increase.

The QDR set priorities and identifies major goals for transforming the Armed Forces of the United States to meet future challenges. It calls for new operational concepts, advanced technological capabilities, and an increased emphasis on joint organizations, experimentation, and training. If truly dramatic improvement in future joint operational effectiveness is to be achieved; however, more is required. First, a DOD-wide transformation strategy, a joint organizing vision, and a joint transformation roadmap are essential to guide, integrate, and synchronize the efforts of the Services. Second, we need DOD-wide reform of key institutional planning, programming, budgeting, and acquisition processes. These two requirements are interdependent; no real progress will be made in one without the other. Further, throughout the transformation period, we still require forces to meet the needs of the Nation; for this we will continue to rely on the current force, as we are today as we begin the campaign against terrorism. We must acknowledge and plan for the impact that aggressive transformation and experimentation could have on the near- and mid-term ability of the force to execute actual peacetime and warfighting missions. Units undergoing transformation, and those involved in experimentation, may not be available or ready to respond to crises within required operational

timelines. None of this is to suggest that transformation should be slowed; we must not let the demands of today overwhelm the necessity to prepare for the future.

The QDR states that defense of the U.S. homeland is the highest priority for the U.S. military; this was painfully reinforced on September 11th. The U.S. must deter, preempt, and defend against aggression targeted at U.S. territory, sovereignty, domestic population, and critical infrastructure, as well as manage the consequences of such aggression and other domestic emergencies. Defending the U.S. homeland requires a comprehensive strategy beginning with fixing responsibility for integrating all related activities. President Bush's establishment of the Office of Homeland Security is being paralleled within DOD. As a start, an integrated DOD Homeland Security working group can identify HLS roles and mission for DOD and examine resource implications. Further analysis and interaction with the Office of Homeland Security is required to strengthen ties between federal, state and local agencies to combat terrorism in the United States. This analysis is leading to important changes in the Unified Command Plan.

Additional work beyond the QDR is required in several areas. First, the role of the Reserve Components - critical to the execution of the strategy - demands attention and will lead to decisions on Reserve and Guard readiness, transformation, and civilian employer support, as well as the basics of end strength and structure.

Logistics capabilities - including strategic mobility, sustainment, and the repair and reengineering of our infrastructure - remain immediate concerns. A comprehensive analysis of all requirements must be completed and appropriate priority of resources established. As for strategic lift, we must aggressively achieve the capabilities called for in the Mobility Requirements Study 2005, as a minimum. Further, we must accelerate the restoration, modernization, and replacement of our mission-essential and quality-of-life facilities, even as we seek authority to eliminate excess infrastructure. These near-, mid-, and long-term logistics needs have significant implications for all levels of risk and must be given appropriate attention.

People remain our most critical asset. The QDR is a good starting point for the transformation of the Department's human resource systems. Although we have a highly trained professional military and civilian workforce today, we need to continue to fund quality of life initiatives, such as health care, pay parity and improved housing, to sustain the

quality force required in the future. More analysis is required to determine how we will continue to recruit and retain the force.

Assessment of Risk. Analytical tools such as Dynamic Commitment and Positive Match wargames indicate that the QDR reduces the strategy-to-structure imbalance and results in moderate near-term risk for the current force executing the revised strategy. This assessment includes the most demanding scenario where U.S. forces respond to two overlapping major crises in different regions, decisively defeating one adversary while defeating the efforts of the other.

Over time the full implications of the QDR will emerge. The ability of the force to field transformed capabilities, while continuing to protect and advance U.S. world-wide interests in the near- and mid-term, will be more accurately assessed as joint and Service transformation roadmaps are developed. Finally, force structure, budget, and infrastructure impacts will become clearer as the Services complete their FY03 budgets and Program Objective Memoranda.

Summary. The Services, Combatant Commanders and Joint Staff have worked with the Office of the Secretary of Defense to ensure that this QDR is founded on strategic requirements. The QDR provides a vision for how our forces will be employed now and into the future. Further, the QDR moves DOD toward balance in two key dimensions: between strategy and force structure, and between the demands of today and those of the future. Sustaining this balance is essential to ensuring that U.S. Armed Forces remain preeminent now and well into the 21st Century.



HENRY H. SHELTON

Chairman of the Joint Chiefs of Staff

APPENDIX A: GOVERNMENT PERFORMANCE AND RESULTS ACT OF 1993

This QDR Report serves as the overall strategic planning document of the Department, as required by Public Law 103-62. Section III, "Defense Strategy," gives the Department's comprehensive mission statement. General goals are covered in Section II, under "U.S. Interests and Objectives." The Department's general policy objectives are to (1) assure allies and friends; (2) dissuade future military competition, (3) deter threats and coercion against U.S. interests, and (4) if deterrence fails, decisively defeat any adversary. These goals are also discussed in Section II.

The Department's risk framework of mitigating (1) force management risk, (2) operational risks, (3) future challenges risk, and (4) institutional risks, are described in Section VII, along with a variety of management initiatives for these areas. These risk areas will form the basis for the Department's annual performance goals under the Government Performance and Results Act.