Transforming Defense

National Security in the 21st Century

Report of the

National Defense Panel

December 1997

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Dear Mr. Secretary:

We are pleased to provide the report of the National Defense Panel, "Transforming Defense—National Security in the 21st Century." This report is in accordance with Section 924 of the Military Force Structure Act of 1996.

Our report focuses on the long-term issues facing U.S. defense and national security. It identifies the changes that will be needed to ensure U.S. leadership and the security and prosperity of the American people in the twenty-first century. We are convinced that the challenges of the twenty-first century will be quantitatively and qualitatively different from those of the Cold War and require fundamental change to our national security institutions, military strategy, and defense posture by 2020.

To meet those challenges, we believe the United States must undertake a broad transformation of its military and national security structures, operational concepts and equipment, and the Defense Department's key business processes. We recognize that much is already being done in this regard and that you are committed to significant change. However, based on our deliberations, it is our view that the pace of this change must be accelerated.

The transformation we envision goes beyond operational concepts, force structures, and equipment. It is critical that it also include procurement reform and changes to the support structure, including base closures, as you pointed out forcefully in your Defense Reform Initiative.

Finally, bringing together all the elements of our national power will demand a highly integrated and responsive national security community that actively plans for the future—one that molds the international environment rather than merely responds to it. Defense needs to continue building on the Goldwater–Nichols reforms and extend that sense of jointness beyond the Department to the rest of the national security establishment and to our friends and allies abroad.

The Panel has drawn on the creative thinking of many elements of the military community, other government agencies, experts on defense and national security, as well as business leaders. In particular, I want to thank you for the cooperation we received from you, other senior officials, civilian and military, and others in the Department. We also drew on the valuable insights provided by studies such as that of the President's Commission on Roles and Missions and the President's Commission on Critical Infrastructure Protection. Our report builds on the findings of the Quadrennial Defense Review, but it looks further into the future and places much more emphasis on the transformation strategy that we consider essential to safeguard our security twenty years from now.

We have not attempted to provide all the answers. Rather, our intention is to stimulate a wider debate on our defense priorities and the need for a transformation to meet the challenges of 2020. Such a debate will be critical in building the necessary support of the Congress and American people for the extensive changes that must be made. We hope that our report will help to build a strong consensus for transforming the national security structure to meet the challenges of the next century. If we achieve that, we will have fulfilled our mission and our commitment to you, the Congress, and the American people.

Sincerely,

Philip A. Odeen

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EXECUTIVE SUMMARY

The United States enters the new millennium as the preeminent political, economic, and military power in the world. Today we are in a relatively secure interlude following an era of intense international confrontation. But we must anticipate that future adversaries will learn from the past and confront us in very different ways. Thus we must be willing to change as well or risk having forces ill-suited to protect our security twenty years in the future. Only one thing is certain: the greatest danger lies in an unwillingness or an inability to change our security posture in time to meet the challenges of the next century.

The United States needs to launch a transformation strategy now that will enable it to meet a range of security challenges in 2010 to 2020. Yet we must do this without taking undue risk in the interim. This transformation promises to be complex. We cannot know the full extent and nature of future challenges. Yet, we must make critical decisions and choices entailing significant investments of resources and energies.

The Future Operational Environment

We can safely assume that future adversaries will have learned from the Gulf War. It is likely that they will find new ways to challenge our interests, our forces and our citizens. They will seek to disable the underlying structures that enable our military operations. Forward bases and forward-deployed forces will likely be challenged and coalition partners coerced. Critical nodes that enable communications, transportation, deployment, and other means of power projection will be vulnerable.

Our domestic communities and key infrastructures may also be vulnerable. Transnational threats may increase. As recently stated by Secretary Cohen, the proliferation of nuclear, chemical, and biological weapons and their delivery means will pose a serious threat to our homeland and our forces overseas. Information systems, the vital arteries of the modern political, economic, and social infrastructures, will undoubtedly be targets as well. The increasing commercialization of space makes it feasible for state and nonstate actors alike to acquire reconnaissance and surveillance services.

In short, we can expect those opposed to our interests to confront us at home and abroad—possibly in both places at once—with asymmetrical responses to our traditional strengths.

Near-term Implications

Defense choices invariably entail risk; the only question is where we take the risk. A significant share of today's Defense Department's resources is focused on the unlikely contingency that two major wars will occur at almost the same time. The Panel views this two-military-theater-of-war construct as, in reality, a force-sizing function. We are concerned that, for some, this has become a means of justifying current forces. This approach focuses significant resources on a low-probability scenario, which consumes funds that could be used to reduce risk to our long-term security. The Panel believes priority must go to the future. We recognize that, in the near term, the United States cannot ignore the threats posed by Iran and Iraq in the Persian Gulf and North Korea in Northeast Asia. However, our current forces, with the support of allies, should be capable of dealing with both contingencies.

The Range of Challenges

The types of missions our military and related security structures will be required to perform in 2010–2020 remain largely unchanged but the emphasis is likely to change. Maintaining regional stability is probably foremost among them, for the best way to forestall military challenges to the United States is to foster a stable international system. This demands full interaction with regional partners and alliances through diplomatic efforts as well as the full integration of U.S. diplomatic, economic, and military activities.

We must be able to project military power and conduct combat operations into areas where we may not have forward-deployed forces or forward bases. In particular, we must have the ability to put capable, agile, and highly effective shore-based land and air forces in place with a vastly decreased logistics footprint. Smaller force structures will be the norm, an evolution that must parallel the development of new operational concepts. Regular deployments to far-flung areas of the globe, from open deserts to confining urban terrain, therefore, are something we should expect. These deployments must not be viewed as a detraction from our traditional missions, but as a central element of the responsibilities of the future.

Just as deployments abroad are key to a stable international environment, an adequate defensive structure at home is crucial to the safety of our citizens and well-being of our communities. One of the salient features of U.S. security in 2010–2020 will be a much larger role for homeland defense than exists today.

Effective deterrence of potential nuclear adversaries can be maintained at the reduced levels envisioned by START III and beyond. Over time, the focus of our efforts to deter nuclear attacks against the United States, its allies, and interests may change substantially from that of today. Deterrence of attack as the central focus of nuclear policy already is being supplanted by the need to manage—identify, account for, and safeguard against—the proliferation and possible use of nuclear and other weapons of

mass destruction. Traditional U.S. nuclear policies may not be sufficient to deter nuclear, chemical, or biological attacks by a rogue state against U.S. allies and coalition partners.

In regard to maintaining U.S. information superiority, we will need to integrate existing and new information systems while exploiting commercial technology. We must also have effective defensive and offensive information capabilities. We will need to recognize that the U.S. lead in space will not go unchallenged. We must coordinate the civil, commercial, and national security aspects of space, as use of space is a major element of national power.

Force Capabilities

Our military is superbly equipped, led, and trained and is blessed with magnificent men and women. We must never forget that our people in uniform have been the core of our strength in the past. They, more than any hardware system, form the real defense capability of today and tomorrow. Under no circumstances should we reduce the quality or training of our people. The technology revolution and advanced weapons we seek to embrace will be for naught if we take our military and civilian work force for granted.

It is clear, however, that in the 2010–2020 time frame our military forces will need capabilities very different from those they currently possess. We are on the cusp of a military revolution stimulated by rapid advances in information and information-related technologies. This implies a growing potential to detect, identify, and track far greater numbers of targets over a larger area for a longer time than ever before, and to provide this information much more quickly and effectively than heretofore possible. Those who can exploit these opportunities—and thereby dissipate the "fog of war"—stand to gain significant advantages.

Current force structures and information architectures extrapolated to the future may not suffice to meet successfully the conditions of future battle. Automation and systems architectures capable of disseminating information to widely dispersed and dissimilar units and integrating their actions will be key. We will need greater mobility, precision, speed, stealth, and strike ranges while we sharply reduce our logistics footprint. All operations will be increasingly joint, combined, and interagency. Furthermore, the reserve components will need to be fully integrated with active forces.

Legacy systems procured today will be at risk in 2010–2020. We must carefully scrutinize their utility for future conflicts as well as for peacetime military operations. Joint Vision 2010 and the visions of the services contain many of the capabilities we need in the future. However, the procurement budgets of the services are focused primarily on current systems and do not adequately support the central thrust of their visions. In light of these factors, the Panel questions the procurement plans for Army equipment, Navy ships, and tactical aircraft of all services.

Reserve and Guard units must be prepared and resourced for use in a variety of ongoing worldwide operations. They will play an increasing role in a variety of these by relieving active units and reducing the operational and personnel tempos of frequent and lengthy deployments.

While the other services have successfully integrated their active and reserve forces, the Army has suffered from a destructive disunity among its components, specifically between the active Army and the National Guard. This rift serves neither the Army nor the country well. The Panel strongly believes the rift must be healed and makes a series of recommendations toward that end.

A fully integrated total force requires a common culture to engender unity of thought and action. Shared operational and training experiences, common educational opportunities, and frequent exchange of leaders among active and reserve components, the different services, coalition partners, and national and international agencies will serve to deepen mutual respect and reinforce a common ethic.

Transformation Strategy

Transforming the armed forces into a very different kind of military from that which exists today, while supporting U.S. near-term efforts, presents a significant challenge. Beyond Defense, we must also transform the manner in which we conduct foreign affairs, foster regional stability, and enable projection of military power.

It is important to begin the transformation process now, since decisions made in the short term will influence the shape of the military over the long term. The Defense Department should accord the highest priority to executing a transformation strategy. Taking the wrong transformation course (or failing to transform) opens the nation to both strategic and technological surprise.

Transformation will take dedication and commitment—and a willingness to put talented people, money, resources, and structure behind a process designed to foster change. Greater emphasis should be placed on experimenting with a variety of military systems, operational concepts, and force structures. The goal is to identify the means to meet the emerging challenges, exploit the opportunities, and terminate those approaches that do not succeed. It will take wisdom to walk the delicate line that avoids premature decisions and unintended "lock-in" with equipment purchases, operational concepts, and related systems whose effectiveness may quickly erode in a rapidly changing environment.

At the core of this effort should be a much greater emphasis on jointness, building upon the legacy of Goldwater–Nichols. However, competition among the services can assist in determining how best to exploit new capabilities or solve emerging challenges. It takes a considerable amount of time, a decade or two, to play out an effective transformation. Indeed, even those military systems that are placed on a "fast track" for development and fielding often take ten years or more to reach forces in the field. Time

also is required to determine how best to employ new military systems, and to make the appropriate adjustments in the force structure.

We must look beyond the challenges for defense and assess the relevance of the National Security Act of 1947 for the next millennium. This framework served us well during the Cold War, but we must objectively reexamine our national security structure if we intend to remain a world leader. Interagency processes, both international and domestic, must be reviewed and refined to provide the National Command Authority and the American people with an effective, integrated, and proactive organization.

We must also look closely at our alliances to ensure they are adjusting to the changing environment. As we work hard to establish mutual trust and commitment with our allies, we must be willing to sacrifice for common goals. Alliances have been and will continue to be a two-way street.

Our intelligence structure faces immensely more complicated tasks than during the Cold War. Asymmetric threats pose particular difficulties. Information technologies are a two-edged sword of both tremendous opportunities and vulnerabilities. The various facets of the intelligence community must merge their efforts and information, handle highly complicated technical challenges, ensure all parts of the intelligence gathering apparatus are robust, and work to ensure their products are easily accessible and meet the needs of the warfighter.

The Panel has identified areas in the Unified Command Plan where seams might hinder the effectiveness of our forces. We recommend that an Americas Command be created to address the challenges of homeland defense as well as those of the Western Hemisphere. A Joint Forces Command would be the force provider to the geographic CINCs, address standardization among the various Unified commands, oversee joint training and experimentation, and coordinate and integrate among the networked service battle labs. A Logistics Command would merge necessary support functions that are now divided among various agencies. Space Command would expand to absorb the domain of information.

Infrastructure

Fundamental reform of the Defense Department's support infrastructure is key to an effective transformation strategy for the years 2010–2020. Today, the Department of Defense is burdened by a far-flung support infrastructure that is ponderous, bureaucratic, and unaffordable. Unless its costs are cut sharply, the Department will be unable to invest adequately for the future. The Panel supports the initiatives put forward by the recent Defense Reform Initiative. However, the Panel believes even more can and should be done.

Meaningful reform of the support infrastructure is not possible unless the Department establishes a more effective and business-like approach to resource management. To that end, the Panel recommends that the Department continue its efforts to reform the acquisition process as well as to rethink the Planning, Programming, and

Budgeting System (PPBS) to make it less burdensome and more receptive to innovation and change.

Accurate cost information is also a prerequisite for cost-effective resource management decisions. Without good cost data, Defense managers have difficulty identifying inefficient practices and unwittingly make suboptimal resource allocation decisions. In addition, the Department must work with Congress to relax "color of money" restrictions.

The Defense Reform Initiative recommends competing 150,000 positions across Defense. We endorse this plan, but recommend expanding it to the 600,000 military and civilian personnel who perform commercially oriented support tasks.

Industrial Base

In coming decades, the United States can only preserve its current technological advantage through time-based competition. The Department of Defense needs to provide industry with incentives to innovate so that we may maintain a qualitative technology and systems edge so that the United States will continue to be preeminent in military technology. Rather than being reactive, we should make our military acquisition process proactive. The Department must work with Congress to devise new rules and procedures that encourage technology development, rather than large production quantities, in order to recover cost and profit. This may create unit cost "sticker shock" unless we shorten the development cycle to lower development costs. But reduced production quantities will reduce total program cost, the real measure of the cost to the nation.

A close examination must be made of industrial mobilization programs. Much of the existing requirements and structures are predicated upon maintaining or overseeing an industrial and manpower mobilization base for a Cold-War era contingency. This approach and associated overhead is clearly inappropriate to the relatively short wars we expect in the future. Further, this mobilization approach is clearly inappropriate, given the short technological life-cycles we experience today and certainly will experience in 2010–2020.

Installations

The Panel strongly endorses the infrastructure recommendations within the Defense Reform Initiative, which stated that there is sufficient surplus capacity for two additional BRAC rounds. Indeed, we believe there may be even more excess capacity that could be identified, should a review be done from a joint-base perspective. Therefore, the Panel strongly recommends that two BRAC rounds be conducted earlier than the current 2001/2005 Department proposal. The object is to transform the base structure from an impediment to a cost-effective enabler of readiness and modernization

The services should also reconsider the traditional concept of the military base. Rather than using on-base housing, commissaries, and other support services, military

personnel would receive additional compensation. This shift would allow the services to reduce their on-base infrastructure, while increasing the benefit received.

The Cost

The issue of how to fund this transformation in this fiscally constrained environment is no small challenge. The Panel estimates an annual budget wedge of $5 to 10 billion will be needed to support a true transformation. This money would fund initiatives in intelligence, space, urban warfare, joint experimentation, and information operations. In the absence of additional defense funding, the transformation could best be funded by infrastructure and acquisition reform. If these reforms are not forthcoming, it will be necessary to reduce Operations Tempo (OPTEMPO), cancel acquisition programs, or reduce force structure and end strength. There will be no easy answers, and difficult choices must be made.

Conclusion

In the increasingly complex world that we foresee, the Department of Defense and its armed services cannot preserve U.S. interests alone. Defense is but one element of a broader national security structure. If we are to be successful in meeting the challenges of the future, the entire U.S. national security apparatus must adapt and become more integrated, coherent, and proactive.

Implementing the transformation described in this Report promises to be complex and will require careful balance to preserve our current security interests. It is our belief, however, that if we refuse to change in a timely manner we could be fundamentally unprepared for the future, and put at risk the safety of future generations of Americans. We have the time and the opportunity to adjust. But we cannot equivocate. We must begin now.

INTRODUCTION

The United States enters the new millennium as the preeminent political, economic, and military power. Our military in particular is superbly equipped, led, and trained and blessed with magnificent men and women in its ranks. For the near term, we are unlikely to see an opponent who can successfully counter our military strength directly.

> ***Looking back from 2020:***
>
> *Different opportunities and challenges; unanticipated asymmetries*

Our military forces today are organized according to current threats. But today's threats are not necessarily the ones we will see in the future. Unless we are willing to pursue a new course, we are likely to have forces that are ill-suited to protect our security twenty years in the future. Our future adversaries will learn from the past and will likely confront us in very different ways. New challenges will surely emerge. Even a regional power with a relatively modest defense budget could alter its force posture and operational concepts to present us with significant problems by avoiding our strengths and attacking our weaknesses.

Therefore, we must begin to change now or risk being caught unprepared. The very context of war and battle could change dramatically over the next generation as enemies find ways to deny us access to contested regions, attack our information systems, and strike at our deployed forces or citizens with chemical and biological weapons. They will seek asymmetric means to overcome our forces and our will. If we fail to anticipate such new challenges and if we fail to change commensurately over the next twenty years, our ability to protect U.S. interests will inexorably erode.

The current era, therefore, offers us a great paradox. On the one hand, we are in a relatively secure interlude following an era of intense international confrontation. On the other hand, we are uncertain about the nature and form of emerging risks. One certainty, however, is clear: the greatest danger lies in an unwillingness or an inability to change our security posture in time to meet the challenges of the next century.

> ***Transformation Strategy:***
>
> *U.S. forces must change—*
> *a process that must begin now!*

The United States needs a transformation strategy that enables us to meet a range of security challenges in 2010–2020 without taking undue risk in the interim. Implementing such a transformation will require a delicate balance. If we transform ourselves too quickly, we may inadvertently dismantle elements of our military that have kept us safe all these years and still have to play a role. But the Panel strongly believes that if we fail to begin the transformation now, we could be fundamentally unprepared for the future, and the security of future generations of Americans will be at risk.

This transformation promises to be complex. We must recognize that we cannot know the full extent and nature of future challenges, emerging threats, or even the pace of change in technology. Yet we must make critical decisions and choices entailing significant investments of resources and energies. The easiest path would be to increase the defense budget by several billion dollars annually to fund the necessary transformation while simultaneously maintaining a defense structure and military strategy to meet near-term challenges. In an era of increasing fiscal austerity, however, such budget increases are unlikely.

If increased funding is not feasible, we can do one or some combination of the following:

- Mount a major effort to streamline support costs and infrastructure;
- Rethink today's defense posture with its focus on two regional conflicts;
- Develop new operational concepts to employ currently planned forces exploiting asymmetric advantages and reducing the number of required forces;
- Reduce readiness and manpower levels;
- Reduce Defense participation in peacekeeping and humanitarian activities;
- Cancel one or more major weapon systems and reorder service acquisition plans, accepting some increased near-term risk.

No matter which course we choose, it is clear that in the increasingly complex world that we foresee, the Department of Defense alone cannot preserve U.S. interests. Defense is but one element of the broader national security structure. If we are to succeed in meeting the challenges of the future, the entire U.S. national security structure must become more integrated, coherent, and proactive. The national security structures laid out by the 1947 National Security Act have served us well over the past fifty years. It is time, however, to think through what changes are necessary and to update accordingly.

Additionally, we must not ignore the role of our alliance partners. We share many interests and have similar security challenges. The United States should not expect to ensure its security unilaterally and must have the active support and involvement of our allies. In some cases we must be prepared to act alone, but in almost all cases we will be more effective if we work within a coalition.

This Report will review the critical issues, challenges, and threats we believe will emerge over the next ten to twenty years. Our response will be influenced by key global trends, their potential manifestation in four hypothetical worlds possible in the years 2010–2020, and how the United States might adapt to meet its future security needs.

We then describe how a range of operational challenges will affect our future security requirements: security of the homeland, support for regional stability, the projection of military power, protection of our space and information assets, and deterrence against attacks by weapons of mass destruction. We then consider the corresponding military capabilities that would enhance our ability to meet our security needs.

Finally, we focus on the specifics of a transformation strategy for our military. We examine the process of experimentation and change leading to new force structures, platforms, operational concepts, and doctrine; consider what revisions might be necessary in the unified command plan that delineates geographic and functional responsibilities of the uniformed services; review Defense infrastructure and support systems; and consider how to best shape our national security arrangements for the twenty-first century.

It is our hope to engender a broad and informed debate of national security. Toward that end, this Report will provide a series of recommendations to move us, as a nation, forward to a more secure future.

Those who expect to reap the blessings of freedom must undergo the fatigue of supporting it.
–Thomas Paine, 1777

THE WORLD IN 2020

KEY TRENDS

The United States enters the new millennium facing challenges very different from those that shaped our national security policy during the almost fifty years of the Cold War. The dynamics of four key trends, parallel and interrelated, are driving change:

- The geopolitical revolution that prompted the collapse of the Soviet Union and that will see the emergence of China as a major regional and global actor;

- Demographic and social pressures on potentially volatile social systems;

- The emergence of a global, interdependent marketplace that affects the well-being of virtually every nation and society; and

- The technological revolution that is transforming advanced industry-based economies into information-based economies and that promises to effect a revolution in military affairs.

All of this must be related to actions taken by the United States. The decisions we make today about what we stand for as a nation and our place in the international system will have tremendous implications, not just for our future, but for the future of people everywhere.

Geopolitical Trends

The political ramifications of the Soviet empire's collapse are likely to continue into the twenty-first century, even as groups of states seek to join together in regional or other interstate arrangements to further common political and economic interests. The ethnic and national pressures for independence and sovereignty that the collapse of the former Soviet Union released may well continue over the next several decades, reconfiguring the landscapes of Europe, Asia, and Africa. Conflict based upon race, religion, political ideology, or economic status will continue to exert internal and external pressures on many nations. At the same time, the role and importance of nonstate actors—whether they are international humanitarian

> ***A Changing World:***
>
> ***Political decisions of the twentieth century may define the environments of the twenty-first century***
>
> - *New ethnic-cultural-religious polarization*
> - *National boundaries redrawn*
> - *Powerful nonstate entities*

providers and multinational corporations, or bands of criminals and illegal drug traffickers—will exert growing influence on the global community.

These developments have implications for our approach to security arrangements, alliances, and international agreements on everything from nonproliferation of weapons of mass destruction, to trade and the environment. We will continue to honor what has been a strong obligation: to support our historic European and other long-term allies and partners, both bilaterally and as a part of NATO. Increased interaction between NATO and the countries of Eastern Europe and newly independent states invites military and economic cooperation that can have profound effects on world stability and long-term U.S. military requirements.

Our involvement in Asia will likely increase and change over time, making our alliances and relationships in this region even more important. We envision a reconciled, if not a unified, Korean peninsula—an eventuality that has significant security implications for the United States as well as for our relations with Japan and China. China and India, with their growing populations and economies, promise to be increasingly important to our strategic interests.

We will continue to be involved in regions that control scarce resources, such as the Middle East and the emerging Caspian Sea areas for oil, as we try to hedge our own and our allies' resource dependencies. We will also continue to be involved with the nations of Africa in areas of mutual interest.

Neither can we overlook the importance of those who share our borders and our hemisphere—Canada, Mexico, Central and South America, and the Caribbean nations. Developments in these countries can have a profound effect on our security and economic well-being.

Demographic and Social Trends

Paralleling and influencing these political developments are social and demographic trends that threaten to outstrip the ability of many countries to adapt. These include rapid population growth in regions ill-prepared to absorb it, refugee migration and immigration, chronic unemployment and underemployment, and intensified competition for resources, notably energy and water.

A Changing People: Adapting to a Changing World Population

- *Uneven and rapid population growth*
- *Migration to resources*
- *Challenge to provide basic necessities*

The impact of burgeoning population growth will not be evenly distributed over the globe. The world's poor and developing countries face the greatest rates of population increase and the concomitant challenge of providing jobs, health

care, decent living conditions, and requisite social services. This challenge will be especially serious in urban areas, which are already experiencing acute shortfalls in services. Such developments may trigger recurrent humanitarian crises characterized by famine and disease that could require military involvement and other responses by the international community. Conversely, it should be noted that the slowing of population growth—and even declines—in other parts of the world will create economic challenges, including strong downward pressure on defense spending in most European countries and Japan.

Economic Trends

Closely tied to the challenges developing from these demographic and social trends are the effects of the expanding global marketplace. U.S. citizens, businesses, and nongovernment organizations will move into every corner of the globe, including those areas "off-limits" during the Cold War. Multinational corporations will continue to gain economic power and political influence, posing opportunities and challenges for diplomacy and other aspects of international relations. Economic sanctions, for example, may be more difficult to implement and enforce, given the multinational character of global corporations.

At the same time, the flow of private capital into the less-developed world can be a force for positive change. The explosion of communications and information accessibility will influence political, cultural, and economic patterns, perhaps profoundly. Critical resources such as water or arable land may become scarcer than oil, exacerbating political, economic, and ethnic tensions. However, access to oil in the Gulf, the Caspian Sea, and elsewhere will likely remain critical to global economic stability. Finally, perceived disparities of wealth, where vast riches are controlled by a relatively few countries, could also create tension and present political and moral challenges for governments.

Technology Trends

Technology will play an ever-increasing and imperative role in America's security policy and programs in the future. Robotics and unmanned vehicles will become a part of everyday life, both in the military and society at large. Nano-technology has the potential to radically alter everything from computer systems to the way we construct household goods and spacecraft. Information technologies, as will be discussed, will play a preeminent role, with offensive and defensive manifestations. Technological advances will also lend themselves to even more lethal and destructive weapons. In the hands of rogue states and terrorist or criminal groups, foreign or domestic, new weapons offer frightening prospects to our country.

In short, we are in the early stages of a revolution in military affairs—a discontinuous change usually associated with technology but also representing social or economic changes that fundamentally alter the face of battle. The rapid

rate of new and improved technologies—a new cycle about every eighteen months—is a defining characteristic of this era of change and will have an indelible influence on new strategies, operational concepts, and tactics that our military employs. If we do not lead the technological revolution we will be vulnerable to it.

ALTERNATIVE WORLDS

> *The future is hidden even from the men who make it.*
> *–Anatole France*

To appreciate the range of security considerations in 2010–2020, the Panel hypothesized four different and plausible futures of the world. While we do not argue that any one of these future worlds will actually occur, their description and articulation help to identify the principal factors that could drive change worldwide in the next two decades. Although we recognize that "wild cards"—such as environmental disasters, wars, epidemics, and technological breakthroughs—can radically alter the international security environment, we focused on creating worlds that reflect various manifestations of the trends discussed previously. Each hypothetical world is briefly described below:

1. The first world, ***Shaped Stability***, describes an environment in which international cooperation on economic development and security issues has created a relatively stable international order. The world's wealth is greater and more evenly distributed. The rise of such transnational challenges as terrorism, organized crime, and environmental degradation has created broad public understanding of the importance of cooperative security arrangements. As a result, the American people have accepted vigorous engagement abroad as essential to their security. For example, the deterrence and prosecution of international crime has required U.S. law enforcement agencies, the intelligence community, the military, and various international government and nongovernment police institutions to collaborate regularly. Partially as a consequence of this cooperation, the rule of law is increasingly accepted internationally.

Nevertheless, this world is not without its continuing frictions. These frictions include demographic pressures, shortages of natural resources, weapons proliferation (including weapons of mass destruction), and continuing ethnic and national tensions. Although somewhat ameliorated by global prosperity, these tensions exist in isolated pockets of the developing world, occasionally spilling over into the developed world. The U.S. military's principal role as an instrument of national security is to augment diplomatic, economic, and political efforts and protect against their failure.

2. The second world, ***Extrapolation of Today***, is a baseline projection of today's uncertainties into an increasingly competitive and politically diverse world. Although the global economy continues to expand, some countries remain

disadvantaged. Economic expansion is most pronounced along the Pacific Rim, where China has become the key economic and political state in the region. India, with a larger middle class and possibly a greater population than China, is also important. Some rogue states, as well as nonstate actors, have acquired the means of delivering weapons of mass destruction. The American homeland cannot be viewed as a sanctuary from their use. Although the United States is still the leading world power, its sustained political-economic-military dominance is uncertain.

3. The third world, ***Competition for Leadership***, envisions a traditional balance of power world in which a hostile regional alliance (or possibly a single nation) is rising to challenge the United States. As a result, the United States adapts existing security relationships and enters into new alliances and trading partnerships to balance and, if necessary, counter these challenges. An all-Asia trading bloc has been formed in the Far East. A new alliance of South and Southwestern Asian nations has formed, centered on opposing the political, economic, and cultural influence of the West. Increased military spending worldwide and regional arms races are prominent features of this world. Moreover, many states have acquired weapons of mass destruction and the means to deliver them. Although ethnic and humanitarian tensions still exist, their relative significance in the international system has been reduced owing to the resurgence of nation-state conflict.

Clearly recognized emerging threats foster public support for the expansion, and use, of military power. The U.S. military must now plan for the possibility of major combat operations against powerful enemies capable of quickly concentrating force against our interests within critical security regions. The military must also position itself to defend the homeland against attacks, the most likely being covert introduction of weapons of mass destruction, attacks by ballistic and cruise missiles, or information systems disruption.

4. The fourth world, ***Chronic Crisis***, describes deteriorating global economic conditions coupled with the breakdown of international institutions. Weakened nation-states, nonstate organizations, and coalitions fight over scarce resources. Alliances are fluid, unpredictable, and opportunistic. Nationalism and ethnic hatreds have formed violent independence movements in Asia, South Asia, and the Middle East. Pivotal states are in crisis. Virtual narco-states (host states dominated by drug organizations) exist in regions of South America and Southeast Asia. Weapons of mass destruction and their means of delivery are widely available. Unchecked massive migrations and failing municipal infrastructures accelerate urban chaos. The United States is in danger of losing much of its will and ability to influence international events.

The American public—perceiving little chance of influencing the chaos abroad—is preoccupied with domestic security as nonstate actors increasingly

penetrate the United States with illegal drugs, terrorism, weapons of mass destruction, and transnational crime.

IMPLICATIONS

In considering these trends and the various worlds and possible strategic environments we may face, several implications emerge. The nation-state, although still the dominant entity of the international system, is increasingly affected by the growing power of multinational corporations and international organizations, transnational encroachments on national sovereignty, and demographic pressures that stress the abilities of governments to meet their citizens' needs. New alliance structures may develop that reflect concerns about these evolving challenges, while less relevant alliance relationships will decline. Technology, geopolitical developments, and economic and social trends may fundamentally alter the realities of today.

> ***The World in 2020:***
>
> *IMPLICATIONS*
>
> - ***Hedge*** *against uncertainty*
> - ***Curtail*** *the outdated/less useful*
> - ***Explore*** *new concepts*
> - ***Adapt*** *over time*

The range of possible outcomes is wide and impossible to predict with any certainty. Each will present unique conditions, many very different from those of today. The central challenge to our defense structure, therefore, is to move forward in a manner that enables us to respond effectively to whatever does occur. This strongly suggests a hedging approach to preparing for the future. We must maintain adequate current capability as we adapt. As we learn more about new ways to apply military power, we can shift the emphasis of our forces while curtailing outdated or less useful forces and operational concepts. As time passes we will learn more about evolving challenges and competitors while continuing to adapt our forces accordingly.

The U.S. military must not go through this transformation alone. Our entire national security establishment and our alliance relationships must change in parallel if we hope to sustain global stability through regional partnerships. Alliance structures, both formal and informal, will grow in importance and should be viewed as essential ingredients to regional stability. For example, we must encourage China to be a constructive member of the international community even as we balance the security needs of our allies with the concerns of China. We must encourage Russian stability as well. At the same time, we may face new regional competitors that threaten U.S. ability to influence events in regions of vital interest. Above all, we must recognize that while protecting traditional interests (nuclear deterrence, support of alliance structures, protection of critical resources,

> ***The World in 2020:***
>
> *The required military transformation must be done within the context of a parallel review of the entire national security establishment.*

the safety of Americans abroad, etc.), an entire new array of operational challenges is emerging that our forces of 2010–2020 must be able to handle.

OPERATIONAL CHALLENGES TO THE MILITARY

Over the last quarter of the twentieth century, the U.S. military has had several successes, perhaps best illustrated in the overwhelming Gulf War victory in 1991. These successes were earned by dedicated professionals who learned from past mistakes and implemented new training and operational concepts and technological advantages to allow us to meet and master these challenges. As we enter a new era, we will face a new and demanding set of challenges that will require us to transform our military and elements of our national security system to meet them.

We can assume that our enemies and future adversaries have learned from the Gulf War. They are unlikely to confront us conventionally with mass armor formations, air superiority forces, and deep-water naval fleets of their own, all areas of overwhelming U.S. strength today. Instead, they may find new ways to attack our interests, our forces, and our citizens. They will look for ways to match their strengths against our weaknesses. They will actively seek existing and new arenas in which to exploit our perceived vulnerabilities. Moreover, they will seek to combine these unconventional approaches in a synergistic way.

THE ASYMMETRIC THREAT

An adaptive adversary:
exploiting his strengths—attacking our weaknesses

- *Attack our will to fight*
- *Employ imaginative tactics and techniques*
- *Deny access to forward locations*
- *Exploit WMD technology*
- *Target fixed installations and massed formations*
- *Move the fight to urban areas*
- *Combine approaches for even greater synergy*

We should recognize that potential competitors will seek every advantage. Their forces almost certainly will not be a mirror image of ours. They may attempt to:

- Employ military tactics that cause high casualties among U.S. forces and civilians to raise the cost and possibly deter U.S. involvement;

- Turn to weapons of mass destruction and ballistic and cruise missiles to neutralize forward ports, bases, and prepositioned assets and to inflict heavy casualties on us and our allies;

- Attack our information systems, seeking to debilitate them;

- Counter our control of the sea by seeding key straits and littorals with large numbers of mines and by subjecting any forces therein to missile salvos;

- Counter our control of the air with speed-of-light weapons and extensive anti-aircraft systems;

- Target fixed installations and massed formations within the range of their weapons and seek greater stand-off ability with those systems;

> *As flowing water avoids the heights and hastens to the low lands, so an army avoids strength and strikes weakness.*
> *–Sun Tzu*

- Attack the underlying support structures—both physical and psychological—that enable our military operations;

- Deny us access to key regions and facilities;

- Use terror as a weapon to attack our will and the will of our allies, and to cause us to divert assets to protect critical installations, infrastructures, and populations.

The most pressing challenges of the future—and therefore potential asymmetric areas that our enemies will try to exploit—are summarized below.

Power Projection

The cornerstone of America's continued military preeminence is our ability to project combat power rapidly and virtually unimpeded to widespread areas of the globe. Much of our power projection capability depends on sustained access to regions of concern. Any number of circumstances might compromise our forward presence (both bases and forward operating forces) and therefore diminish our ability to apply military power, reducing our military and political influence in key regions of the world. For political (domestic or regional) reasons, allies might be coerced not to grant the United States access to their sovereign territory. Hostile forces might threaten punitive strikes (perhaps using weapons of mass destruction) against nations considering an alliance with the United States. Thus, the fostering and nurturing of allies and alliances, as well as our ability to protect our allies from such threats, will be an important factor in our future ability to project combat power anywhere in the world.

> ***POWER PROJECTION***
>
> *DEMANDS for power projection continue to increase*
> *CHALLENGES to power projection continue to increase*

Even if we retain the necessary bases and port infrastructure to support forward deployed forces, they will be vulnerable to strikes that could reduce or neutralize their utility. Precision strikes, weapons of mass destruction, and cruise and ballistic missiles all present threats to our forward presence, particularly as stand-off ranges increase. So, too, do they threaten access to strategic geographic areas. Widely available national and commercial space-based systems providing imagery, communication, and position location will greatly multiply the vulnerability of fixed and, perhaps, mobile forces as well.

At the same time, constraints on forward-basing (i.e., infrastructure outside the continental United States: ports, installations, prepositioned equipment, and airfields) and advanced technologies threaten to impede our access to key regions. Geographic realities are putting greater demands on power projection capabilities. For example, as oil and gas fields in Central Asia gain in strategic value, we may need to project power greater distances, farther from littorals or established bases. Political realities also drive our standoff options. As we attempt to protect our own forces, we are left with a dilemma: our allies, whom we are trying to protect, will remain exposed—a situation that requires new provisions for their defense. Adaptive enemies, emerging technologies, greater distances, and altered alliance relations will present new conditions to U.S. military forces that must be mastered if we are to maintain our current ability to project power.

Information Operations

The importance of maintaining America's lead in information systems—commercial and military—cannot be overstated. Our nation's economy will depend on a secure and assured information infrastructure. These systems are also instrumental to the success of military operations. As we learned in the Gulf War, significant advantages in situational awareness translate directly into significant advantages on the battlefield. As a result, information operations are likely to be crucial to the course of future conflict, challenging us, and our allies, in both offensive and defensive ways.

> ***INFORMATION OPERATIONS***
>
> *A future opportunity, competition, and vulnerability —all at once*

Already, the commercial development of information technology is so widespread, accessible, and cheap that it promises to create both opportunities and risks for our nation. For example, access to, and the meaningful synthesis of, information will be a key aspect of relations among states and nonstate actors, in peace, crisis, and war. The entity that has greater access to, and can more readily apply, meaningful information will have the advantage in both diplomacy and defense. More ominously, this information arena will also create new vulnerabilities as we depend more and more on computer systems and

telecommunications to manage financial operations, public utilities, and other key elements of economic systems.

Effective use of information superiority demands that we move rapidly to the next level of "jointness" among the uniformed services: full commonality of U.S. military information systems. This commonality must be interoperable with the information systems of our allies as well, if we are to reap the advantages of coalition operations.

Given the importance of information—in the conduct of warfare and as a central force in every aspect of society—the competition to secure an information advantage will be a high-stakes contest, one that will directly affect the continued preeminence of U.S. power.

Space

Given the importance of space-based capabilities to information operations, our ability to operate in space, support military activities from space, and deny adversaries the use of space will be key to our future military success. In the near term, a wide variety of commercial and international initiatives will make space much more accessible. As the costs of launching payloads into space are substantially reduced, the use of space for civil, commercial, and military purposes will quickly expand. Consequently, our ability to control operations on the land, sea, and air will depend to an increasing extent on our access to space.

SPACE

- *An **opportunity** for us AND our adversaries*
- *A **lead** we cannot lose*
- *An **asset** we must protect*

We must anticipate that our enemies will seek to use commercial remote-sensing and communications satellites, along with space-based timing and navigation data, to accurately target U.S. forces with high degrees of accuracy. In turn, they will seek to degrade our abilities to track and target them. If we do not control the military utility of space, the advantages we now hold in information operations and more traditional military operations could be put at risk. Therefore, in addition to exploiting space for our own benefits, we must protect our space assets to include our commercial assets and deny our enemies the opportunity to gain military advantages through their use of space.

Urban Operations

A particularly challenging aspect of the future security environment will be the increasing likelihood of military operations in cities. Demographic trends in the less developed regions of the world are creating more and more sprawling urban and suburban complexes characterized by a significant increase in younger populations and decaying infrastructures. At the same time, political, financial, informational, and cultural developments are making cities more integral to

relations among sovereign nations. The new terrain of the "megacity", unfamiliar to modern-day forces, is not the open terrain on which much of our conventional superiority is predicated. We must also expect to be involved in cities while conducting such contingencies as humanitarian and disaster assistance, peacekeeping, and peace enforcement operations.

Cities challenge our ability to project power and mount military operations. Urban control—the requirement to control activities in the urban environment—will be difficult enough. Eviction operations—the requirement to root out enemy forces from their urban strongholds—will be even more challenging. Urban operations have historically required large numbers of troops while diluting technological advantages, making for extremely tough fighting. Urban structures and human densities vastly complicate targeting and maneuvering. Many of our current weapons are often ineffective in urban environments because of trajectory limitations, built-up areas, subterranean passages, and unobservable targets. Our ability to employ force could be significantly hampered by the proximity of noncombatants, vital infrastructures, and government and nongovernment institutions.

URBAN OPERATIONS

Prepare now:

Contingencies
- *Urban control*
- *Urban defense*
- *Eviction operations*
- *Targeting and strike*

Conditions
- *Noncombatants*
- *Skyscraper "jungles"*
- *Vital infrastructure*
- *Government institutions*

We should make every effort to avoid conducting urban operations unilaterally. Allies, particularly those in the affected region, will likely be instrumental to mission success and eventual transition back to peacetime conditions. Civil-military operations will be fundamental to the aftermath of such battles.

Weapons of Mass Destruction

The proliferation of nuclear, chemical, and biological weapons and the means to deliver them (to include missiles) poses a serious and growing threat to the people and interests of the United States. The threat is qualitatively different because of its potential to do extreme damage, physical and psychological, with a single strike. Due to their availability, relative affordability, and easy use, weapons of mass destruction

WEAPONS OF MASS DESTRUCTION

- *Proliferated*
- *Available*
- *Affordable*
- *Simple*

Vulnerability of citizens at home and troops abroad

allow conventionally weak states and nonstate actors to counter and possibly thwart our overwhelming conventional superiority.

These weapons threaten security at home. The 1995 use of sarin gas in the Tokyo subways stands as a stark and ready reminder of the chemical threat. Biological weapons are an even more serious problem. For example, they could be readily introduced into mass transportation systems and quickly spread to thousands of people with devastating consequences. Small nuclear devices smuggled into population centers could also produce thousands of casualties.

Abroad, such weapons challenge our ability to project combat power. Their use, or threat of use, could deter allies from granting the United States forward operating areas and degrade or impede the ability of our forces and allies to effectively complete the mission at hand. Campaigns could be waged by our enemies in several venues: from driving wedges among our allies to direct use against American forces in a region to retribution against communities within the United States.

To address the challenges posed by weapons of mass destruction, the United States will need a comprehensive approach that begins with excellent intelligence actions to prevent or slow proliferation, to protect our forces and citizens from attack, and to deal with the consequences of such an event, at home or abroad. Collectively, efforts like these would begin to form the basis of a sufficient weapons of mass destruction deterrence policy for the twenty-first century. The capability to manage the consequences of such weapons of mass destruction, in particular, will be an important tool in strengthening deterrence by denying an adversary the political and psychological benefits of use. As we did with the Cold War nuclear threat, we must invest in preparing for the "unthinkable." Consequence management will require effective coordination among local, regional, national, and international agencies and organizations, both here and overseas. We must take care to ensure that the proper training facilities are available, such as the Center for Domestic Preparedness in Alabama.

Transnational Threats and Challenges

Transnational challenges and threats, by definition, reside in more than one country and require a multi-partner response. They range from information, space, and weapons of mass destruction attacks to problems that might become security threats (e.g., environmental disruptions, pandemics, and mass migrations).

TRANSNATIONAL CHALLENGES

- *The effect felt at home and abroad*
- *A challenge that crosses borders and confuses jurisdictions*
- *A response requiring the attention of all*
  - *Domestic and foreign governments*
  - *Nongovernment organizations*

These challenges are real. Terrorists, foreign and domestic, state and nonstate, have already demonstrated the ability to strike at us at home and abroad. Their sophistication, access to technologies that could include weapons of mass destruction, and frequent state sponsorship give them great potential to do us harm.

Criminal enterprises, to include the illegal drug trade, are also detrimental to the well-being of our society. Their access to enormous amounts of money allows them to purchase the goods and services they need to penetrate our communities more effectively and put our citizens at risk. With ties to rogue states, corrupt public officials, and terrorist organizations, these criminal entities could present a significant challenge to our domestic security.

In short, the increasing erosion of the sanctity of international borders as barriers to the challenges described above will force us away from our existing paradigms; in response, international cooperative agreements, intelligence systems, consequence management structures, and a variety of intergovernmental jurisdictional and legal procedures will have to be developed and adapted.

U.S. NATIONAL SECURITY IN 2020

NATIONAL SECURITY IMPERATIVES

In a world characterized by these key trends and future challenges, we must preserve the sovereignty, political freedom, and independence of the United States with its values, institutions, and territory secure; protect the lives and personal safety of Americans at home and abroad; and provide for the well-being and prosperity of the nation and its people. These concepts can be summarized by the following imperatives.

National Survival

> ***NATIONAL SURVIVAL***
>
> - *Threats of physical destruction*
> - *Threats to undermine economy, institutions, and values*

Protecting the United States from any threats to its survival as a nation remains the primary role of our military forces. In terms of the immediate physical destruction of the country, weapons of mass destruction, particularly nuclear weapons, remain the primary threat. Therefore, we must maintain the appropriate offensive and defensive capabilities to protect and defend against the coercive threat or actual use of these weapons. At the same time, threats that would destroy or undermine our economic viability, institutions, and values, while perhaps taking longer to have an effect, are ultimately as dangerous. Consequently, our military capabilities must also be able to assist in protecting the nation from threats such as drug trafficking or assaults such as cyber-terrorism on our information or economic infrastructures.

Global Economic and Political Stability

> ***GLOBAL STABILITY***
>
> - *Cooperative relationships with friends and allies*
> - *Expanded free market arrangements*
> - *Free flow of information*
> - *Interoperability with allies*

The United States remains a world military and economic superpower. Our national interests are enhanced by global stability. The main threats to global stability are wars, international terrorism, the proliferation of weapons of mass destruction, and the destabilizing effects of demographic, economic, and social trends as discussed previously. These threats pose challenges that require an effective response from all elements of the national security establishment, including robust and specialized military capabilities.

Cooperative relationships with other nations, especially our friends and allies, are essential to maintaining global stability. Such relationships promote global interdependence, ensure orderly political arrangements, and bolster the rule of law. Cooperation increases our access and ability to influence and promote stability, democratization, peaceful resolution of conflicts, and humanitarian efforts. Central to this cooperation is expansion of free market arrangements into all regions of the world. At the same time, we must promote and sustain U.S. technology in ways that cultivate the advancement of U.S. scientific and commercial development while maintaining interoperability with our allies. Finally, we must foster the free flow of information to promote national security and economic prosperity, reduce tensions, and promote international cooperation.

Domestic Security

DOMESTIC SECURITY

- *Safety*
- *Protection*
- *Preparedness*

...peace of mind at home...

Ultimately, Americans must feel secure and safe in their own country. Beyond its responsibility to secure our borders against attack, the Department of Defense must be able to assist civil authorities against a variety of threats to lives and property in the United States, regardless of their source.

These imperatives cannot be considered in isolation. They are interrelated and mutually reinforcing, each contributing to the overall security of the United States. We must recognize that pursuing these imperatives may directly conflict with the interests of other states, groups, and individuals. Consequently, we acknowledge that security is a dynamic process that changes and adapts to strategic realities.

ALTERNATIVE STRATEGIES FOR THE 21ST CENTURY

The Panel discussed a wide range of alternative strategies ranging from those that depicted the United States as relatively withdrawn from military and political involvement in the international system (but heavily engaged economically) to those that saw the United States as broadly engaged. In the latter case, one variation depicted the United States as heavily dependent on the military cooperation of allies and coalition partners to assert effective military power abroad. Another variant witnessed the United States as heavily dependent upon unilateral military action in virtually every region of the globe. In all cases, the United States was portrayed as being prepared and able to defend its homeland, although the degree of threat was varied.

It was the Panel's judgement, however, that selecting a strategy appropriate for twenty years hence was not possible or desirable. Events and circumstances at that time will drive the decisions of the U.S. leadership. Therefore, we believe that the best way to ensure our future security is to provide

a process for developing the tools and concepts necessary to implement whatever the most appropriate strategy might be at that time. What did become clear in our discussion is this: our current course is unlikely to produce the military capabilities necessary to meet the range of challenges we foresee in 2010–2020.

The Panel considered operational challenges the United States may face in light of current U.S. force structure and strategy, as well as that posited by the Quadrennial Defense Review (QDR). While the Panel acknowledges that many of today's legacy systems will play a role in deterring and responding to threats to U.S. interests, we believe that the current and planned structure, doctrine, and strategy—that is to say, our current security arrangements—will not be adequate to meeting the challenges of the future.

The force structure of the future must have the ability to respond effectively to some of the new challenges:

- Information attacks;
- The use of weapons of mass destruction—especially against civilian and commercial targets;
- Space operations;
- The absence of access to forward bases;
- Deep inland operations;
- Mass population problems such as urban operations and mass refugee or epidemic crises.

Therefore, the Panel focused on the need for a transformation strategy and how best to prepare our security structures now for the unknowns of the 2010–2020 time frame. In the pages that follow, we consider the range of challenges the United States will have to meet, the capabilities we will need, and how to obtain them.

The Strategy for the future:

TRANSFORMATION

- *Develop the process to produce the tools and concepts to engage the future*
- *Change defense structure to match emerging challenges*
- *Develop concepts that embody the total force*

MEETING NATIONAL SECURITY CHALLENGES OF 2020

Current defense strategy states that U.S. forces should be capable of fighting two regional wars at almost the same time. Potential threats in North Korea and Southwest Asia define the type of threat we may confront. This two-theater war concept is predicated on the belief that the ability to fight more than one major war at a time deters an enemy from seeking to take advantage of the opportunity to strike while the United States is preoccupied in another theater. Moreover, this posture dictates that, should the second enemy strike, we would swiftly deploy the necessary forces to defeat the second aggressor while continuing to successfully engage the first.

The Panel agrees fully that the United States cannot afford to ignore the near-term threats posed by Iran and Iraq in the Persian Gulf and North Korea in Northeast Asia. Our current forces, however, with the support of allies, should be capable of dealing with Iraq, which still poses a serious threat to the region and appears intent on acquiring an offensive WMD capability. The risks in Korea remain high, but the challenge in that theater is unique: a large, well-concealed force with extensive artillery and rocket forces and likely armed with chemical and possibly biological and nuclear capabilities. Forward bases could be put at risk, limiting the ability to deploy forces into Korea and sustain them. We must continue to work with South Korea to cope with this threat while we attempt to moderate it by political and economic means. As long as we retain the ability to introduce forces into the region, we have adequate combat power within the present force structure to deal with this threat. As a result, it is our judgment that our current force structure is sufficient for the regional threats that we see today.

The Panel views the two-military-theater-of-war construct as a force-sizing function and not a strategy. We are concerned that this construct may have become a force-protection mechanism—a means of justifying the current force structure—especially for those searching for the certainties of the Cold War era. This could leave the services vulnerable if one of the other major contingencies resolves itself before we have a transformation strategy in place, a strong demand for immediate, deep, and unwise cuts in force structure and personnel.

Current Two-Theater Construct

- *A sizing mechanism for the past*
- *A concern for today*
- *An inhibitor in reaching tomorrow*

Accept transitional risk
Emphasize long-term security

The two-theater construct has been a useful mechanism for determining what forces to retain as the Cold War came to a close. To some degree, it remains a useful mechanism today. But, it is fast becoming an inhibitor to reaching the capabilities we will need in the 2010–2020 time frame.

The issue is not whether the current posture is useful. The real issue is where we are willing to take risk. The current posture minimizes near-term risk at a time when danger is moderate to low. A significant share of the Defense Department's resources is focused on the unlikely contingency that two major wars will break out at once, putting greater risk on our long-term security. While we cannot identify future threats precisely, we can identify the challenges. Our priority emphasis (including resources) must go to the future.

Therefore, the Panel concludes (without understating today's security construct) that the Defense Department must move beyond its current focus to pursue a transformation strategy that safeguards our qualitative edge now and in the future. Incorporated in those efforts must be careful consideration of the forward deployed and forward presence arrangements and, most important, our relationships with allies in various regions of the world.

The scope of the missions that the Department of Defense must be prepared to undertake does not appear at first glance to be radically different from the past: regional stability, homeland defense, projection of power, space operations, strategic deterrence, and maintaining information superiority—all missions that the U.S. military has done before to a greater or lesser extent. What makes these missions different today, and especially in 2010–2020, is that the nature of the challenges is changing. Executing missions will be more complex, and there will be a greater need for cooperation with other instruments of national power, as well as with allies and coalition partners. Underlying all of these missions and linking them together is the growth in information technology, which creates opportunities and problems that we are just beginning to comprehend.

FUTURE DEPARTMENT OF DEFENSE MISSIONS

- *Missions remain largely unchanged*
- *Emphasis among missions changes*
- *Specific challenges within those missions may be radically different*

The combined effect of new and evolving challenges to our national security is profound. It demands a new approach to defense. It suggests that without significant change in our national security structures and processes, we face the grave risk that we will be unprepared for the future. The primary focus of our preparation for these future challenges is outlined below.

HOMELAND DEFENSE

Protecting the territory of the United States and its citizens from "all enemies both foreign and domestic" is the principal task of government. The primary reason for the increased emphasis on homeland defense is the change, both in type and degree, in the threats to the United States. Besides the enduring need to deter a strategic nuclear attack, the United States must defend against terrorism, information warfare, weapons of mass destruction, ballistic and cruise missiles, and other transnational threats to the sovereign territory of the nation. In many of these mission areas, the military will necessarily play the leading role; however, many other threats exist which will require Defense to support local law enforcement agencies, as well as a host of other federal, state, and local entities.

POTENTIAL HOMELAND VULNERABILITIES

Cold War— *Strategic Nuclear Attack by Superpower*
Today and Tomorrow— *Nuclear Attack by ????*
PLUS
Terrorism

Information Warfare

Ballistic and Cruise Missiles

Transnational Threats

Attacks on Critical Infrastructure

America may not be any more or less safe than before, but the challenges to its safety and security will be very different

Threats to the United States have been magnified by the proliferation of, and the means to produce and deliver, weapons of mass destruction. The increasing availability of relatively inexpensive cruise missiles and the capability to fabricate and introduce biotoxins and chemical agents into the United States means that rogue nations or transnational actors may be able to threaten our homeland. Along with the growth of delivery systems, the technology needed to create warheads housing nuclear, chemical, or biological weapons has also proliferated. The complexity of the WMD challenge lies in the number of potential enemies who have access to, and may choose, this asymmetric means of attacking the United States in an effort to offset our conventional strengths.

An integrated set of active and passive measures for deterring and defending against the use of weapons of mass destruction is needed. These measures must involve a range of federal departments and agencies which, in turn, must incorporate the state and local levels of government in their planning.

Effective missile defense may also reduce the risk of a limited missile strike and deter blackmail attempts by those who would seek to thwart U.S. military and diplomatic actions. Even if our abilities to defend against large-scale

nuclear attack remain inadequate, we must retain the option to deploy, if necessary, a missile defense capable of defeating limited attacks.

Although not seriously considered since the late 1950s, coastal and border defense of the homeland is a challenge that again deserves serious thought. We see no clear and present danger of an invasion by an armed force; however, the apparent ease of infiltration of our borders by drug smugglers, illegal immigrants, and contraband goods illustrates a potentially significant problem. It suggests that terrorist cells armed with nuclear, chemical, and biological weapons could also infiltrate with little difficulty. Better coordination between those national agencies charged with gathering intelligence outside our borders and with those charged with protecting our citizens and territory will be an absolute requirement. Coordinated intelligence, when coupled with the close integration of efforts by the Navy, Coast Guard, other government agencies, and local authorities, should be able to stop the majority of those who would cross our borders for illicit purposes.

No defense will ever be so effective that determined adversaries, such as terrorists bent on making a political statement, will not be able to penetrate it in some fashion. This is perhaps even true in the case of a regional enemy who threatens to execute WMD attacks on the U.S. homeland employing organized infiltration forces. Even the threat of such attacks could seriously impair our power projection operations, especially if our political leadership felt compelled to accord the enemy's homeland sanctuary status from attacks by U.S. forces.

Managing the consequences of an attack by WMD or other mass casualty-producing devices will require action from all levels of government. Although "first responders" will take the lead (assuming they are still viable) in the vast majority of cases, the Department of Defense must be prepared to assist. Preparation will be the most effective form of assistance. The Panel recommends that the National Guard together with the Army Reserve be prepared to:

- Train local authorities in chemical and biological weapons detection, defense, and decontamination;
- Assist in casualty treatment and evacuation;
- Quarantine, if necessary, affected areas and people; and
- Assist in restoration of infrastructure and services.

The U.S. Coast Guard and the Department of Defense should work closely to ensure that new classes of cutters are outfitted with a combat systems suite that gives these ships a robust capability in support of homeland defense, including such missions as drug interdiction, immigration control, and anti-transnational crime operations. Additionally, the U.S. Coast Guard and the Department of

Defense should investigate the feasibility of providing some U.S. Coast Guard ships with a capability to assist in the cruise missile defense of the homeland.

Information systems are rapidly becoming the key components of the nation's infrastructure. At the same time, our competitors will likely redouble their efforts to use our increasing dependence on information systems against us. The potential for an enemy to use attacks on information infrastructures as a means of undermining our economy and deterring or disrupting our operations abroad is of increasing concern. As the threats to commercial and defense information networks increase, the defense of our information infrastructure becomes crucial. The Department of Defense's reliance on the global commercial telecommunications infrastructure further complicates the equation. Our response to information warfare threats to the United States may present the greatest challenge in preparing for the security environment of 2010–2020. The threat is diffuse and difficult to identify. Consensus on how to guard against it is difficult to establish. The recommendations of the President's Commission on Critical Infrastructure Protection (PCCIP) should be the foundation of our future information security program. According to the Commission, the United States must begin to:

- Declare a policy and build international consensus on protecting critical infrastructure;
- Strengthen the protection of targets within the infrastructure and deny access to those who wish to disrupt its use; and
- Share information on threats, conduct analysis of vulnerabilities, and issue warnings of potential attack.

The Department of Defense must play an active role in the process envisioned by the Commission and its responsibilities should be made clear. Although information systems are only a small part of a much larger infrastructure, the Department of Defense must take the initiative in developing the techniques and procedures required for information security.

The terrorist threat to the United States is a complex issue which, as it encroaches upon U.S. territory, transitions from a Defense and State activity to one managed primarily by the Department of Justice or local law enforcement agencies. To date, the hand-off of responsibilities and sharing of intelligence on known and suspected terrorists has not been properly delineated and may, in some areas, be dysfunctional. It is not envisioned that Defense would ever take the lead in combating terrorism in the United States. The Defense Department must be prepared, however, to advise and assist law enforcement agencies in actions taken by the nation against terrorism. A key element in that assistance must be the sharing of information on both national and international terrorist organizations and their activities.

The security of our society and our citizens must be a primary concern. The emergence of new threats that have both the means and the incentive to strike at our homeland necessitates a heightened degree of readiness by our national security structures to defend against such attacks and to minimize and contain the harm they might cause.

Homeland Defense

The Panel recommends:

- Develop integrated active and passive defense measures against the use of WMD.
- Develop and retain the option to deploy a missile defense system capable of defeating limited attacks.
- Incorporate all levels of government into managing the consequences of a WMD-type attack.
- Prepare reserve components to support consequence management activities.
- Support the recommendations of the President's Commission on Critical Infrastructure Protection.
- Use Department of Defense assets to advise and assist law enforcement in combating terrorist activities.

REGIONAL STABILITY

U.S. national security is directly related to the stability of regions far from our shores. It follows, then, that a major focus of our national security policy—indeed, a principal role of not only our military forces but of all our components of international influence—should be maintaining and strengthening regional stability.

The challenges the United States faces in 2010–2020 are likely to be even more complex and multi-dimensional than those of the second half of the twentieth century. While some of those challenges may threaten U.S. interests directly, a far greater number will test U.S. diplomatic, political, economic, and intellectual resourcefulness to avert and prevent crises that require the intervention of our armed forces. The efforts we and our allies invest in helping to defuse regional or local tensions, promoting sustainable economic development, nurturing the rule of law and human rights, or alleviating human suffering can produce substantial savings by eliminating the need to deploy military forces to the afflicted regions. U. S. efforts to promote democratic reform and market economies in the countries of East and Central Europe and Newly Independent States have made a contribution to the relatively peaceful evolution of those states and their reintegration into the international political and economic community. Thus, a proactive policy to foster regional stability, far from being a lesser mission, should be viewed as an essential component of U.S. national security. The evolution of a more secure and predictable environment will allow the United States to promote its interests globally without employing military forces as often as we do today, and should be central to our security strategy.

> ***REGIONAL STABILITY***
>
> *Demands continued interaction with regional partners and alliances through diplomatic efforts*
>
> *Requires the constant integration of U.S. diplomatic, economic, and military activities*

During the Cold War, regional issues were heavily influenced by our policy of containment of the Soviet Union. The United States and the Soviet Union vied with one another for their respective spheres of influence, but their competition also kept some regional instabilities (e.g., the former Yugoslavia) in check. Today, the problems are more complex and intertwined:

- Expanding U.S. economic activity has increased existing interests or led to new interests in different regions;
- Competition for regional influence now involves nongovernment and international organizations in addition to state actors; and
- Ethnic, nationalistic, or political complexions of regions have changed because of changes in the geopolitical landscape.

Responding to regional stability challenges will entail a broader and more integrated application of the various elements of national power and international cooperation than exists today. Today's forward-based and forward-deployed forces play an important role in enhancing regional stability. However, they should not be the primary resource in this critical area.

The most effective tool should be diplomacy. Diplomacy can help shape the environment and establish the preconditions for successful use of other national security tools. The responsibility for stability in a region should fall first on nations in the region, or on regional organizations. Diplomatic efforts should encourage proactive measures that promote regional stability, focusing on those nations whose interests are compatible with ours. To do this in the fractured post-Cold War world requires more robust diplomatic capabilities than we budget for today.

Alliances also play a key role in solving regional stability problems. Our partners in these alliances are closer than we to the regional problems, and their historic ties to the specific issues can sometimes be used to advantage. We must preserve ties with our Cold War great-power allies (e.g., United Kingdom, Germany, France, Japan, Korea, and others), while encouraging great powers who are not allied with the United States (i.e., Russia, China, and India) to embrace emerging forms of cooperation while dissuading them from following paths that could lead to military competition.

The success of future military alliances or coalitions will depend on a degree of cooperation that goes beyond a "division of labor." It will require developing and implementing common doctrine, training, and the ability to operate smoothly as a combined, integrated force, much as the U.S. military services operate jointly today.

Cooperation in the area of armaments will also be a factor in alliance relations, starting with cooperation at the research and development level—with appropriate attention to sharing economic benefits and jobs—and including sharing the risks and costs of experimentation and procurement. Past cooperation has some successes as well as some failures. Cooperative development efforts based on ties (including cross-investments) between companies are more likely to succeed than government-to-government agreements. They should be encouraged. Such cooperation in joint development and sales can produce sizeable cost savings for the United States and its partners, as well as draw on the considerable intellectual and industrial capacities of allied countries.

Beyond diplomacy and alliances, economic tools are powerful means to influence the regional environment. In many instances, economic problems in a country or a region cause instability. The United States, in concert with its economic partners and international financial and development organizations, can address specific regional economic problems in ways that promote stability. For

example, trade, economic aid packages, or other incentives not only open doors to economic cooperation on a bilateral or regional basis but also can offer a sound foundation for political dialogue and security cooperation.

While we may not prefer the U.S. military to be the first response to regional crises, the Department of Defense will continue to be committed to peacekeeping and humanitarian relief missions in support of U.S. national interests. These missions, which are best accomplished in coordination with other nations, will likely involve nongovernment and international organizations whose integration into operational environments must be carefully developed. Advance planning should identify clear interrelationships, responsibilities, and, when appropriate, lines of authority.

The challenge confronting U.S. military planners is that the forces, training, and equipment used to maintain ready power projection capabilities do not necessarily lend themselves to the requirements of stability operations. The unpredictable and unique challenges generated by regional crises often require forces tailored to fit specific requirements. This will likely entail restructuring of some forces now focused on regional conflicts to conduct these less demanding but more likely contingencies. Reserve forces, for example, can provide skills that stem from their civilian specialties. Greater use of the reserve components to substitute for active units may also alleviate the operational and personnel tempo pressures on the active components and enable them to maintain their readiness for other missions.

Clearly, the complexity of meeting the challenges of regional stability demands the use of all the elements of national power—diplomatic and economic as well as military. A key question is how to integrate them effectively, both within the U.S. government and with our allies. Done well, it will enable the United States and its allies to influence and shape future security environments to our mutual benefit.

> ***NATIONAL SECURITY STRUCTURE***
>
> *Involvement of all our national tools early may prevent the over-reliance on military force later*
>
> *Emphasize INTEGRATION of U.S. tools and PREVENTION of regional instabilities*

In keeping with this approach, we should look to agencies that traditionally have had a domestic focus to play a larger role in international affairs. The Coast Guard, for example, could be a model for navies in other parts of the world. The Coast Guard participates in numerous international search and rescue cooperative programs and engages in other international activities that build trust and strengthen military-to-military ties with other countries. Outfitted with updated and adequate combat systems, the Coast Guard could make a stronger contribution to U.S. regional stability efforts in coordination with the Commanders-in-Chief (CINCs). We recommend that the Department of Defense and the Coast Guard move to establish appropriate Memoranda of Understanding

with the regional CINCs to more closely couple Coast Guard international activities to Commander-in-Chiefs regional stability programs.

The current approach to addressing national security engages the Department of Defense and services too often and too quickly in situations that should have been resolved by non-military means. Failure to devote adequate attention and resources to promoting regional stability and security increasingly results in the use of military forces to restore social normalcy in areas not central to U.S. strategic interests, such as Somalia, Haiti, and Rwanda. Put in a more positive way, by strengthening our diplomatic, political, economic, and other assistance efforts, we may be able to prevent the breakdown of order, which requires the use of military force.

In this regard, we should also pay more attention to interagency representation overseas. Representatives from other than the Defense Department should be assigned to CINCs. Similarly, Defense representation at embassies in important countries must be carefully considered. The Defense representative should be a senior officer or civilian with interagency and joint experience and should represent the Department of Defense and Chairman of the Joint Chiefs of Staff as a whole.

JOINTNESS

Extend the spirit and intent of 'jointness' beyond U.S. forces
to
the U.S. interagency process and to inter-alliance venues

Regional Security

The Panel recommends:

- Restructure some units to deal with smaller scale contingencies such as stability operations.
- Substitute reserves for active units to alleviate PERSTEMPO pressures driven by regional security concerns.
- Develop greater interoperability with alliance partners in the areas of doctrine, training, operational techniques, and R&D efforts.
- Incorporate other government agencies, such as the Coast Guard, into CINC regional security planning.
- Involve all agencies of the national security apparatus as an integrated team.

PROJECTING MILITARY POWER

Projecting military power will continue to be a central element of U.S. defense strategy. As a global power the United States will employ all the instruments of power—diplomatic, political, economic, and military—to fulfill its obligations and protect its national interests. The skillful application of these instruments will not only protect our interests and those of our allies, but will do so short of war. However, if armed aggressors threaten our interests, we must be prepared—preferably in concert with our allies, but alone if necessary—to respond with sufficient military power to defeat them.

To meet future requirements to project military power and conduct combat operations, the United States must transform the present force, taking advantage of new technology, operational concepts, and force structures. Major combat operations in the future may well require forces and systems that are legacies (e.g., mechanized forces, naval surface combatant, short-range fixed and rotary-wing aircraft) of those currently in use. However, the cutting-edge ability to accomplish U.S. national security objectives will come from new approaches and new thinking about power projection and asymmetric warfare capabilities. The depth and breadth of the capabilities needed are only now becoming apparent, but we can foresee the broad requirements.

POWER PROJECTION

Project military power into critical areas:

- *More rapidly*
- *Absent forward access*
- *With smaller units and footprint*
- *With greater lethality*

We must be able to project military power much more rapidly into areas where we may not have stationed forces. The ability to project lethal forces—in the air, on the sea, or on the land—will be essential. Toward that end, our ability to project combat power anywhere in the world will require new technologies, operational concepts, and capabilities to meet the new challenges. First among these new challenges is the need for a much smaller force "footprint" characterized by fewer but more capable attacking troops and platforms supported by an even smaller logistics element. Priority challenges will also include an enhanced military responsiveness distinguished by its increased range of employment and resulting in reduced exposure of our forces.

In short, we must radically alter the way in which we project power. Projecting military power on short notice into the backyard of a major regional power is an inherently demanding enterprise. This is particularly true when that enemy is willing to accept vastly more casualties than the United States. In this situation, there is a high premium on forces that can deploy rapidly, seize the initiative, and achieve our objectives with minimal risk of heavy casualties.

Forward-deployed land forces would have to operate dispersed. They would not operate from a few fixed bases characterized by "iron mountains" of

supplies, but would rather rely on a combination of numerous small, dispersed supply points. Along with dispersion, ground units would emphasize speed to facilitate the ability to concentrate rapidly for close combat as required. They also may operate in smaller units that place great emphasis on seeing deep (through Special Operations Forces and deep-reconnaissance teams, along with reconnaissance helicopters and unmanned aerial vehicles). These units would be integrated into the U.S. reconnaissance architecture, which would also comprise constellations of satellites and unmanned aerial vehicle "grids." Employing rocket artillery, unmanned combat aerial vehicles, and attack helicopters, these units would both emphasize extended-range precision strikes and support similar strikes by air and sea forces. Concentrating ground forces, either to seize or to control certain kinds of terrain (e.g., urban areas), may prove exceedingly challenging in this environment.

Maritime forces would rely more heavily on a "distributed" and networked battle fleet that would comprise, along with carriers, extended-range precision strike forces based on surface and submerged combatants, including submarines, arsenal ships, land-attack destroyers and integrated amphibious forces. The naval expeditionary power projection fleet would employ both short-range aircraft, maneuver forces, and reconnaissance and strike unmanned aerial vehicles. Maneuver forces would employ systems that would insert forces to strike or seize objectives while avoiding an enemy's defenses.

Air forces would place greater emphasis on operating at extended ranges, relying heavily on long-range aircraft and extended-range unmanned systems, employing advanced precision and brilliant munitions and based outside the theater of operations. Aircraft, unmanned aerial vehicles, and unmanned combat aerial vehicles operating in theater could stage at peripheral bases outside enemy missile range, or on Mobile Offshore Bases or carriers. Great reliance would be placed on aerial refueling to extend aircraft range, and perhaps on multiple, austere bases in theaters where "touch-and-go" refueling and rearming could take place.

POWER PROJECTION

Exploit our own offensive asymmetries

Such a force would be fully joint and increasingly combined, engaging in multidimensional (i.e., integrated ground, sea, and aerospace) and, where possible, multinational operations at close and extended ranges. It would be fully integrated through a global, distributed reconnaissance and intelligence architecture composed of satellites, unmanned aerial vehicles, sensors, and infiltration forces. Unmanned systems would likely provide a growing proportion of airborne reconnaissance and strike forces.

Power projection operations would focus on disabling the enemy's strategic center of gravity (including his warmaking potential and military forces), and occupying key terrain. In general, we must be able to rapidly target and

access whatever an adversary values most, the loss of which would render him either unable or unwilling to continue his hostilities. This has always been an objective in war, though very difficult to achieve, given war's uncertainties and frictions. Toward that end, we should try, so far as possible, to stop aggression through our own strategic initiative and control of the battlespace. Accomplishing this will likely require the simultaneous execution of a range of operations—conducting extended-range precision strikes, seizing control of space and information superiority, exercising ground and sea control, and providing missile defense.

Along with the asymmetric U.S. military advantages noted above, our forces will also have to operate and organize differently for power projection in order to achieve the following objectives:

- Inserting and extracting forces in the absence of forward bases;
- Forward-deploying forces prior to a conflict if forward bases are available, but at risk;
- Resupplying forward forces through airlift and sealift operations when access to forward ports and airfields is at risk;
- Seizing and controlling key terrain (including urban terrain) if our ground forces must operate dispersed;
- Achieving air superiority against an enemy's missile force—ballistic and cruise, as well as air-to-air and surface-to-air threats; and
- Defending key regional coalition partners against enemy missile strikes.

The visions of the various services contain many of the capabilities outlined above. However, the procurement budgets of the services do not adequately reflect the central thrust of their visions.

Concentration on effects, not destruction

Meeting the power projection challenge will require aggressive transformation. This process may present some risk in the mid-term as the force transitions from the combat capabilities of the post-Desert Storm era to those demanded in the 2010–2020 security environment. The risk is moderate, however, and acceptable, given the capability of the current force and the improbability of a hostile competitor making a decisive technological leap ahead in the near term. Furthermore, risk is likely to decline as we develop and deploy new capabilities. The longer we delay action, however, the greater the risk. Key to managing the risk of a major conflict while we transform the force is that at any point in the process we retain the

means to conduct major combat operations and, more important, that potential adversaries understand that we have this capability. Successful power projection requires more than robust lift and the ability to wage effective operations against major regional threats. It requires other capabilities, described below.

Handling Lesser Military Threats

In our transformation efforts we must also provide the capabilities required for other emerging challenges. In many cases, the training and equipment used to prepare forces for major combat operations will also be able to handle these challenges. However, unique and critical military capabilities demand specialization. In addition, these challenges may well present difficult operational environments (urban deployments, chemically or biologically contaminated locales, major refugee flow) that do not fit easily the way our forces are currently structured. A partial solution to this dilemma may come from the reserve components (described in detail later in the Report). The specialized skills that reside in the reserves can make a significant contribution in tailoring our contingency forces to deal with emerging challenges to our security. It is also critical that we seek allied military support in these situations. In almost all cases, a coalition approach is clearly preferable to the United States operating alone. In some cases, our allies or regional organizations may be in a position to handle lesser contingencies without significant U. S. involvement. Nonetheless, the United States, both today and as is likely in the future, will possess some unique capabilities, such as transport and command, control, communications, and intelligence. Therefore, U.S. support will likely be in demand even when allies bear the brunt of the military operations.

LESSER THREATS

- *Some overlapping capabilities with major combat operations*
- *Many unique and specialized capabilities*
- *Anticipated critical contributions from allied capabilities*

Potential for significant contribution from the reserve components

Effective Urban Operations

Urban environments will present particularly thorny problems to our military forces. The maze of streets, crush of population, and complex of buildings and vertical and subterranean constructions present a demanding landscape that has the capacity to absorb ground forces, confound the effectiveness of stand-off weapons, and slow operations to a virtual standstill.

URBAN OPERATIONS

- *Specialized weapons*
- *Tailored intelligence and communications*
- *Sophisticated operational concepts*
- *Civil–military and interagency coordination*
- *Joint and allied force integration*

Increase priority; expand efforts

Even peacetime operations tend to be complicated and hazardous in an urban habitat.

Although we might prefer to avoid urban situations, mission requirements in peace and war may not allow this preference. We need to develop intelligence systems and military capabilities that enable the effective control (or eviction) of regular enemy forces from urban terrain. Furthermore, we must do so without putting at risk friendly forces or noncombatants, while being careful not to destroy critical infrastructures that will be essential to post-hostility recovery. Finally, urban operations will require sophisticated operational concepts, civil–military and interagency coordination, new force structure elements, and integrated efforts by joint and allied forces. Emerging technologies will change the characteristics of the urban battlefield and thus our concepts for fighting there.

In recent years the Department of Defense has focused research and development effort on urban warfare issues, and the services, especially the Marines, are developing new and better ways of fighting in cities. These efforts should be encouraged and expanded now if we are to successfully meet the challenges of the future.

Projecting Military Power

The Panel recommends:

- New approaches and thinking about power projection and our asymmetric capabilities.
- Smaller forces with greater lethality supported by leaner logistics.
- Widely dispersed ground units characterized by speed of execution and ability to concentrate at strategic points.
- Small units such as special operations forces and other ground teams specializing in deep reconnaissance.
- Distributed and networked battle fleets from which air, land, and sea attacks are launched.
- Air forces with greater emphasis on operating at extended ranges with tactical air and long-range aircraft and unmanned aerial systems.
- Both offensive and defensive measures to reduce WMD vulnerability of deployed forces.
- Expanded research and development focused on urban warfare issues.

SPACE OPERATIONS

Unrestricted use of space has become a major strategic interest of the United States. The next twenty years will see dramatic expansion of space operations for a variety of purposes. We are in an era similar to the early development of aviation, in that breathtaking opportunities are there for those who can envision the possibilities and who possess the skills and determination to act upon them.

Commercial use of space is expanding quickly, and on a global scale. In the next ten years, more than 1,000 satellites are projected to be launched. This represents a total investment (including all related services) of more than one-half trillion dollars. The majority of these satellites will be commercial. In 1996, for the first time in history, commercial launches exceeded government launches. Worldwide today more than 1,000 companies develop, manufacture, and operate space systems. Many of these companies are in the United States.

Our enemies, however, will seek to develop their own space capabilities or to gain access to space-derived products. The explosion in the commercial use of space will afford them the opportunity. As the costs of getting to space and operating there decline—and we expect that they will—not only will we see more satellites in space, but more military organizations will have the means to access them.

Military competitors will seek ways to reduce our current advantages. As competition increases, business will turn to government for protection. Some protective measures may take the form of regulations or treaties, but as the "flag follows trade," our military will be expected to protect U.S. commercial interests.

Space power is an integral part of the revolution in military affairs and a key asset in achieving military advantage in information operations. For the military, space is the information battle's high ground. The United States cannot afford to lose the edge it now holds in military-related space operations.

Despite our strong position, our space program has vulnerabilities. The small number of U.S. launch installations and present launch processes increase our vulnerabilities and costs of accessing space. Our assets in space are also vulnerable and they lack the ability to detect attack. Our protection and denial capabilities are rudimentary, limited to encryption of communication links, some degree of hardened electronics, and enough redundancy to guard against catastrophic loss of capabilities. Denial of enemy space capabilities is largely limited to neutralizing enemy ground installations employing conventional or special operations forces.

Greater accessibility to space by our competitors will strongly influence the struggle for advantage in military operations. For example, an adversary

could use commercial or third-party national remote-sensing and communications satellites, along with space-based navigation data, to help identify or target forward-deployed U.S. forces and fixed facilities such as ports, airfields, and logistics centers. Therefore, we must take steps now to ensure we have the capability to deny our enemies the use of space.

In short, developments in space will both challenge our military and offer it opportunities. Our defensive efforts should extend to ground stations that enable and support operations as well as to the satellites themselves, which will require the hardening or shielding of electronics against interference. We should develop sensors to determine the source and type of interference we might see applied against us so that we can take steps to mitigate its effect and attack the source. We must substantially improve our ability to conduct surveillance of space objects in order to maintain our situational awareness and adjust operations accordingly. And we must be prepared to deny applications that support adversary military operations.

To capitalize on the opportunities that space lends to military operations, we must maintain our lead. We have a strong foundation on which to build. We should emphasize policies and strategies needed to coordinate the civil, commercial, and national security sectors of space. For example, we should be able to better integrate Defense Department and intelligence community operations. We must take advantage of increasingly innovative commercial practices and continually investigate the advantages and vulnerabilities that commercial investments in space will bring. We should accurately incorporate them into our long-range planning and integrate them into routine operations. We should also examine innovative applications such as paying for modifications that will make commercial systems more useful in crises. Furthermore, we should seek to secure the cooperation of private industry in addressing national security implications in space.

SPACE OPERATIONS

- *Emphasize coordination policies (civil/commercial/national security)*
- *Incorporate innovative commercial practices*
- *Investigate advantages and vulnerabilities of commercial assets*
- *Improve space-asset surveillance*
- *Improve asset protection (ground stations and space platforms)*
- *Develop a robust science and technology program*
- *Develop improved models and simulations*
- *Train commanders and educate national decision makers on space-based capabilities*

Fully exploit the opportunities of space
Proactively address associated vulnerabilities

We need to develop a robust space science and technology program that incorporates more experimentation, giving priority to technologies for which there is no commercial market to support innovation and the fielding of the capabilities we will need to meet emerging challenges. We need better simulation models to use in our analyses, war games, exercises, and training. We must educate our

various commands, services, and related national security actors on what capabilities space affords them. The outcome of all this should be better operational concepts and new space capabilities (including better situational awareness and improved precision strike). With the right focus, we can maintain our lead in space and protect against any vulnerability that might cost us an advantage in military operations.

Space Operations

The Panel recommends:

- Emphasize policies and strategies to coordinate civil, commercial, and national security sectors of space.
- Take steps to ensure the capability to deny enemies the use of space.
- Improve the capability to conduct surveillance of space objects.
- Develop the capability to protect space assets and related ground stations.
- Improve the capability of related ground stations
- Develop a robust space Science and Technology program.

MAINTAINING U.S. INFORMATION SUPERIORITY

Essential to maintaining information superiority will be the development of a "knowledge system" that meaningfully synthesizes existing and new information systems. Toward that end, there are two imperatives to maintaining U.S. information superiority.

First and foremost, we must be able to exploit advances in commercial technology. Given that commercial technology is ubiquitous, we will have to develop the means to exploit it (i.e., transform technology into military capability) more quickly than our military competitors. We must also recognize that our ability to exploit information technologies to create systems architectures—the integration of forces and platforms—is likely to be a future core capability. Second, we must have effective defensive and offensive information capabilities. Not only must we be able to defend our systems against cyber-attack, but we must also be able to discern the origin of cyber-attacks and provide a commensurate response.

Information Operations

The Panel recommends:

- Develop the ability to transform and exploit technology into military capability more rapidly.
- Exploit information technology to integrate forces and platforms more effectively.
- Develop effective defensive and offensive information capabilities.

COUNTERING WEAPONS OF MASS DESTRUCTION

Weapons of mass destruction are an expanding threat. As a result, our operational concepts must stress preventive measures including enhanced intelligence operations, an adequate homeland defense, the means to manage the consequences of a serious attack within the United States or against our interests abroad, and force dispersion with a limited logistics footprint, as well as defenses for our forces and the ability to project power in the absence of forward bases.

> ***As the new millennium approaches, we face the very real and increasing prospect that regional aggressors, third-rate armies, terrorist groups and even religious cults will seek to wield disproportionate power by acquiring and using these weapons that can produce mass casualties. These are neither far-fetched nor far-off threats.***
>
> ***–Secretary of Defense William S. Cohen***

The days of the six-month build-up and secure, large, rear-area bases are almost certainly gone forever. WMD will require us to increase dramatically the means to project lethal power from extended ranges. We cannot assume, however, that such measures will, in and of themselves, protect our forces. We must also develop appropriate defensive measures integral to our deployed forces. Even more efficient and lighter protective gear will be required. Vaccinations will be the norm, and detection capabilities must be our highest priority.

Furthermore, we must provide a conventional, non-nuclear deterrent capability against the use of weapons of mass destruction. The above described measures will form the basis of a conventional deterrence as potential adversaries recognize that we are not only capable of striking them from outside their WMD range, but that we are also capable of operating within a contaminated environment. It must be absolutely clear that the United States will respond decisively if weapons of mass destruction are employed against our homeland or against our forward-deployed forces.

Weapons of Mass Destruction

The Panel recommends:

- Develop appropriate defense measures organic to our deployed forces.
- Give highest priority to detection capability.
- Provide a conventional, non-nuclear deterrent capability against the use of weapons of mass destruction.

FORCE CAPABILITIES

Does the U.S. military run the risk of being unprepared for the challenges of 2010–2020? It could, if we are on the cusp of a military revolution. *Joint Vision 2010* argues that the future will find the U.S. military operating in an environment of uncertainty, faced with very different kinds of challenges than those encountered in the Cold War or the Gulf War. It notes, "Accelerating rates of change will make the future environment more unpredictable and less stable, presenting our armed forces with a wide range of plausible futures."

Much of this change will be stimulated by rapid advances in information and information-related technologies, which are transforming societies and businesses, and which seem likely to effect comparable changes in military organizations. *Joint Vision 2010* states that "the emerging importance of information superiority will dramatically impact how well our armed forces can perform their duties in 2010."

In fact, this military revolution is characterized, in part, by a rapidly growing potential to detect, identify, and track far greater numbers of targets, over a larger area, for a longer time than ever before, and to order and move this information much more quickly and effectively than ever before. This seems likely to produce a very different kind of competition between "finders" and "hiders" than we have seen in the past. Reconnaissance architectures, comprised of satellites, unmanned aerial vehicles, remote sensors, and individual soldiers, among other elements, may be able to help create a condition of information superiority in which the adversary's forces and infrastructure are clearly identified, while friendly forces remain shrouded from the enemy. In military parlance, such an architecture could dissipate some of the "fog" of war for those who can exploit it to achieve information superiority.

On the other hand, the "hiders" will seek to frustrate the efforts of the "finders" through a variety of means, including strikes against the reconnaissance architecture and passive measures such as stealth, electronic countermeasures, and the dispersion, cover, and concealment of forces. Thus, while it will be important to seek information superiority to realize the enormous boost it could provide to military force effectiveness, this condition will not be easily achieved.

That being said, the importance of creating as much of a favorable information "gap" between friendly and enemy forces as possible is highlighted by the changing character of the competition between the offense and the defense. The emerging military revolution also is characterized by the potential to engage a far greater number of targets, over a far greater area, in far less time, and with much greater lethality, precision, and discrimination than ever before. Combined with information superiority, such a capability could be an instrument of decisive advantage for the force that possesses it.

In summary, the emerging military revolution seems destined to present the U.S. military with challenges and opportunities that are fundamentally different from those of today.

CONVENTIONAL FORCES

Given the Panel's vision of the future battlespace—the result of the previously discussed revolution in military affairs, geopolitical, socio-economic, and demographic trends, potential asymmetric threats, and the new and emerging operational military challenges—we can expect significant differences in the characteristics of our forces. Consequently, it is insufficient to predicate future capabilities on what is needed today. Such current organizational structures (e.g., "above-the-line" forces defined as divisions, wings, Marine Expeditionary Forces, and carrier battle groups) and the current and planned weapons systems will be required in some forces to maintain our military capability, but alone they do not necessarily prepare us for future challenges. The transformation to a force for 2010–2020 should not be dominated by efforts to modernize legacy systems that will have much less utility in the future.

FUTURE CONVENTIONAL FORCES

- *Systems architectures*
- *Information system protection*
- *Information operations*
- *Automation*
- *Small logistics footprint*
- *Mobility*
- *Stealth*
- *Speed*
- *Increased operational and strike ranges*
- *Precision strike*

Force Characteristics

The Panel believes that relative to today's forces, the U.S. military of 2010–2020 should place far greater emphasis on the following characteristics:

- **Systems Architectures**. Information technologies could dramatically enhance the ability to integrate the actions of widely dispersed and dissimilar units. Such systems architectures would enable highly distributed, network-based operations;

- **Information System Protection**. The defense of our commercial and military information architecture will be critical and will allow us to protect our forces and our platforms from the enemy's reconnaissance efforts. New means to protect information systems and identify the origin of cyber-attacks must be the highest priority. Today, we are vulnerable;

- **Information Operations**. Significant improvements in the application of military force will be achieved by electronic strike capability. We need to develop the ability to insert viruses, implant "logic bombs," conduct

electromagnetic pulse and directed energy strikes, and conduct other offensive electronic operations;

- **Automation** (to include the migration into space and unmanned platforms). The major advantage automation gives us is speed. Given that time will be an increasingly scarce resource in future warfare, automation-aided operations can temporarily compress operations;

- **Small Logistics Footprint**. Not only do we require lighter, more mobile forces, but we also require lean logistics. There may be no secure rear areas. A smaller logistics footprint will represent less of a target and, at the same time, less of a strain on indigenous infrastructures and our own strategic air and sea lift;

- **Mobility**. The ability to move our forces rapidly and in the right configuration is key to their effectiveness. Most importantly, the greater their mobility, the greater their protection;

- **Stealth**. Increasingly, any force that can be seen is likely to be hit. The best protection, therefore, is not to be seen. At the same time, the ability to avoid detection affords the opportunity for tactical surprise—which in turn can allow for strategic and operational surprise. The stealth embodied in our planes and submarines today will be increasingly important for our air, sea, *and* ground forces tomorrow;

- **Speed.** Given advances in the speed of information flow and communications, the unfolding and duration of critical engagements—indeed the tempo of war itself—have shrunk dramatically. The rate at which we can mobilize, deploy, set, act, and reset for any action—preemptive or reactive—will likely be fundamental to success;

- **Increased Operational and Strike Ranges**. We will need increased ranges to ensure the safety of our forces and their ability to achieve desired effects from disparate locations. Greater ranges will also offset the growing vulnerability of forward forces;

- **Precision Strike**. Precision weapons will enable the use of far fewer platforms, with no loss in force capabilities. Precision and the ability to discriminate among targets near each other will limit collateral damage.

These characteristics, while important to the capabilities we will need in the 2010–2020 time frame, are not in and of themselves enough to ensure long-term utility of weapons systems, platforms, and organizational structures.

Concentration of effects, not forces

Force packages must be applied in a joint and combined environment, interoperable with all of the components involved in security operations. It

is through the synergistic concentration of effects, not by the assembling of force packages in one locale, that we must dominate our enemies.

If these characteristics comprise a template for our future forces' success, the question remains whether we currently are developing the right systems, operational platforms, and organizational structures to dominate and prove victorious in the future. The Panel suggests that the specific examples below represent the kind of actions we should take to transform our military to meet the challenges of the future.

All Forces

- Shift funds from upgrade of legacy systems to new systems focused on meeting the challenges of 2010–2020;
- Place more emphasis on directed energy, electromagnetic energy, and cyber-weapons;
- Enable greater speed, and penetration capability for Special Operations Forces to preempt or resolve terrorist activity or WMD threat;
- Provide more near-zero miss, long-range, stealthy cruise missiles, brilliant munitions, and submunitions in lieu of dumb weapons;
- Integrate ballistic and cruise missile defense to protect forces (both point and area targets), theaters, and regions; harmonize land- and sea-based missile defenses (i.e., ballistic and air breathers) in an effort to eliminate duplicative systems;
- Establish a distributed user-friendly global information system that includes a broadcast architecture;
- Create a "distributed," in-theater logistics structure in lieu of "iron mountains" (large stockpiles);
- Provide the ability to project significant power from forward deployed areas, as well as the United States, within hours or days rather than months;
- Explore new air and sealift concepts emerging in the commercial world;
- Accelerate network-centric operations linking sensors and weapons;
- Replace individual service component-unique systems with integrated, joint command, control, communications, computers, intelligence, surveillance, and reconnaissance systems;
- Structure less manpower-intensive forces;
- Create highly networked forces able to see the battlespace in near real time and to dynamically task and control forces.

Land Forces

- Become more expeditionary: fast, shock-exploiting forces, with greater urban operations capability;
- Reduce systems that are difficult to move and support; shift to lighter, more agile automated systems;
- Evolve to lighter, greater range, more lethal fire-support systems;
- Develop the twenty-first century tank to be a unique vehicle relying on speed, agility, and hyper-velocity gun technology for operational effectiveness (the Panel's view is that 30-35 tons is the appropriate weight range);
- Move beyond Force XXI to incorporate the concepts embodied in *Army After Next;*
- Restructure above-the-line units, which evolve to smaller operational elements with equivalent (or greater) lethality;
- Move toward advanced vertical lift systems versus service-life extensions of current rotary-wing aircraft.

> ***CONVENTIONAL FORCES***
>
> *Consolidate gains from Force XXI and move directly to Army After Next (AAN)*

Sea Forces

- Move toward small-signature ships capable of providing sustained long-range, precision firepower;
- Design ship production to allow rapid incorporation of latest technology;
- Provide greater quantities of small unmanned underwater vehicles to augment and extend the reach of submarines;
- Construct follow-on carriers to capitalize on short take-off, vertical landing; unmanned aerial vehicle; and unmanned combat aerial vehicle aircraft characteristics with attendant reduction in size and personnel;
- Consider sea-based mobile off-shore bases to provide access in situations where forward bases are unavailable or at risk to prepositioned forces;
- Provide insertion vehicles incorporating the latest technologies to extend the reach of the maneuver component of the naval power projection forces.

Aerospace Forces

- Ensure a proper mix of short- and long-range aerospace forces to enable optimal strike operations;
  - Move toward fewer numbers of short-range aircraft providing increased delivery capacity with smaller, but more accurate weapons ;

  - Explore new approaches to long-range, precision delivery vehicles;
- More distributed satellite systems to provide redundancy and survivability of command, control, communications, computers, intelligence, surveillance, and reconnaissance;
- Short-take-off-vertical-landing aircraft on wide array of airfields, ships, and sea-based platforms;
- Increase ground surveillance capability.

Near-Term Implications

Applying the above principles and in view of the services' future visions and concepts, the Panel does not follow the logic of several of the services' procurements.

- With regard to land forces, the Panel questions continuing the upgrade of the M1A1 tank and the continuing evolution of the main battle tank beyond its current capabilities, as well as the projected numbers of Crusader and Comanche. Although the Panel recognizes the potential capabilities of these systems and the valuable results of the Force XXI and Advanced Warfighting Experiment initiatives, it believes that future requirements would best be met if the Army consolidates and limits their applications. These capabilities should be deployed to III Corps and the forward-based forces—as a risk mitigation capability—while transitioning the balance of the Army (force structure and programs) to the *Army After Next* concept. These actions and others will require a redesign of the Army's force structure and concomitant acquisition programs, which may result in end strength savings.

- In regard to the Navy, the Panel disagrees with the decision to terminate the arsenal ship test bed. The value of a test bed to support a major warfighting transition was clear in the use of the NORTON SOUND to support the Navy's introduction of surface-to-air missiles. Given the characteristics the Panel believes necessary for future forces, a new hull form should be built for testing and to serve as a platform for a number of topside antenna configurations and weapons systems. The Panel also believes that the Navy should look closely at accelerating the transformation to the CVX class of carriers in lieu of procuring additional Nimitz class CVNs and converting one or more of the four Trident SSBNs coming out of strategic service to alternative missions.

- On the issue of tactical air, the Panel notes the cost over the lifetime of all three current programs and questions the total number of planned aircraft buys and the appropriate mix of systems in 2010–2020. With respect to the F/A–18E/Fs and Joint Strike Fighter, the Panel supports Secretary Cohen's plan to continue to evaluate the ultimate numbers and mix of F/A–18E/Fs procured dependent upon the ultimate capability, cost, and schedule successes of the Joint Strike Fighter. The Panel further believes that the services must demonstrate how these two systems, and the F–22, can operate effectively in the 2010–2020 environment, which will be characterized by new challenges to our power projection capability.

- The Panel remains concerned about the near-term ground surveillance capabilities and recent programmatic decisions (i.e., reducing the JSTARS buy).

STRATEGIC NUCLEAR FORCES

The demise of the Soviet Union has dramatically altered the strategic landscape. Although tensions with Russia have eased, Russia retains numerous nuclear weapons. Russia is placing greater doctrinal emphasis on its nuclear forces, investing the necessary funds to keep their land based missile forces viable at a time when its conventional military forces are in decline.

Simultaneously, China is expanding its nuclear arsenal and developing missiles capable of reaching the U.S. mainland. Its current arsenal is small—several hundred—compared with that of the United States and Russia, but China has the capability to be a more significant nuclear power by 2010–2020.

The key task for U.S. nuclear policy in the first decades of the twenty-first century will be to deter attacks against the United States and its allies, discourage the use of, or the threat to use, nuclear weapons, and promote efforts to achieve balanced and stabilizing reductions in nuclear arsenals. Progress in U.S.–Russian arms control is currently stalled because the Russian Duma has not yet ratified START II. However, retaining nuclear arms at current levels for an extended period is not in the U.S. interest. Those levels will be expensive to maintain and do not facilitate the transformation process essential to respond to future threats.

> ***STRATEGIC FORCES***
>
> *Emphasis of deterrence should move from sheer numbers to strategic equilibrium*

Among the considerations critical to shaping future nuclear policy will be the need to take account of possible shifts in China's nuclear policy, the fate of the Russian nuclear arsenal, and the possibility that other states, including some hostile to the United States, may acquire nuclear weapons. Ensuring that there is a strategic equilibrium among Moscow, Beijing, and Washington will be important to our future security. That does not mean, however, that we will need large numbers of nuclear weapons. Effective deterrence of potential adversaries can be maintained at the reduced levels envisioned by START III and beyond.

Over time, the focus of our efforts to deter nuclear or conventional attacks against the United States, its allies, and interests may differ substantially from that of today. Deterrence of attack as the central focus of nuclear policy is already being supplanted by the need to manage—identify, account for, and safeguard against—the proliferation and possible use of nuclear and other weapons of mass destruction. Such efforts are already part of the cooperative threat-reduction initiatives undertaken by the United States and other concerned countries, and they will have to be continued as long as nuclear weapons remain a threat. Arms control and nonproliferation agreements—such as the Nuclear Non-Proliferation Treaty, the Chemical Weapons Convention, and a strengthened Biological Weapons Convention—will also play an important role in reinforcing the foundations for a more stable security system at lower levels of armaments.

Traditional U.S. nuclear policies may not be sufficient to deter nuclear, chemical, or biological attacks by a rogue state against U.S. allies and coalition partners or forward bases and staging areas to which we seek access. It is unlikely, moreover, that our nuclear forces would deter nonstate actors (terrorists, criminals, or others) who seek to coerce or punish the United States or its allies.

It is in the best interests of the United States, Russia, and the international community that the United States and Russia move as rapidly as possible to START III. We should also consider the potential of non-nuclear weapons to strengthen deterrence. Advancing military technologies that merge the capabilities of information systems with precision-guided weaponry and real-time targeting and other new weapons systems may provide a supplement or alternative to the nuclear arsenals of the Cold War.

Finally, U.S. security considerations must account for the potential risk posed to the U.S. homeland by existing nuclear weapons in other countries. Defense systems should defend against a limited attack by a rogue state or terrorist, but they will not be effective against the large nuclear arsenals that already exist in Russia and may exist in China and elsewhere. Defensive systems will be more effective if they are coupled to arms control agreements that limit offensive capabilities. Given the evolving threat and continued improvement of our missile defense technology, a hedging strategy, rather than immediate deployment of a missile defense system, is a sensible approach. But, it is important that we proceed in a way that permits rapid deployment if threats should develop and our technologies mature.

Strategic Forces

The Panel recommends:

- Maintain support for Cooperative Threat Reduction programs.
- Move to START III as soon as possible.
- Couple defensive systems with arms control agreements.
- Sustain stockpile stewardship programs to support Comprehensive Test Ban Treaty.

RESERVE COMPONENTS

The reserve components serve as an increasingly important element of our armed forces. These citizen-soldiers ensure the involvement of the American people in our nation's security. Moreover, their military skills are often enhanced by their experiences within the civilian sector (e.g., engineering, construction, communications, police, aviation, civil affairs, and medical).

The reserve forces today play an increasing role in a variety of military operations worldwide, relieving active units and reducing both operational and personnel tempos of frequent and lengthy deployments. Indeed, in some cases they supply the entire force structure for specific missions. The Panel expects that this role will be expanded. Reserve and Guard units must be prepared and resourced for use in a variety of ongoing operations. Given this, the Department should consider establishing the funding priorities for specific Guard and Reserve programs based on the amount of total force mission capability they provide. The Congress determines funding priorities today.

Not only will reserve forces augment and complement the active forces overseas in missions ranging from combat to peacekeeping to regional stability and contingency operations, but they will increasingly be involved in containing threats here at home. As noted, homeland defense is a mission of growing importance for our military forces. The reserve components, especially the Army Guard, will play a key role in this mission. Effectively organizing and training the appropriate reserve assets to meet the homeland defense mission will not only provide the United States with a more effective deterrent, but it also will provide a quicker and more comprehensive response to crises should they occur. However, concerns over *posse comitatus* must be addressed.

More 'active' reserve components

In any event, the reserve structure must recognize the authority of the Service Secretary for the reserve components under Title 10, as well as the Service Secretary's responsibilities for the Guard under Title 32. This relationship works best in an atmosphere of trust between the active and reserve components in their common commitment to the security of the United States.

The Army and its Reserve Components

While the other services have continued to increase the integration of their active and reserve forces, the Army has suffered from a destructive disunity among its components, specifically between the active Army and the National Guard. This rift serves neither the Army nor the country well. The Panel strongly believes the rift must be healed and makes a series of recommendations toward that end.

As the Army undertakes its transformation, reductions in both the active and reserve components can be expected. Such reductions must be the product of deliberations by the reserve components, the Chief of Staff of the Army, the Secretary of the Army, and the Secretary of Defense. Neither the active nor the reserve components should benefit at the expense of the other. Both must be committed to meeting the security needs of the nation.

To enhance the capability of the Guard as a component of the total force, we recommend the following. Many of the principles embodied in these recommendations pertain to all components of the Army, as well as to some of the other services, and are discussed elsewhere in the Report.

First, a series of changes should be made to the Guard's combat units:

- Some portion of the Army National Guard's divisional combat (including combat support) units should become part of active divisions and brigades. Infantry and mechanized battalions, for example, would be integrated as organic units of the active divisions and would deploy with them. The active component commander would be responsible for their combat readiness and training;

- Given the changing character of warfare and the threats we face, Guard divisions should begin now to organize under the concepts proposed in *Army After Next*. The utility of reorganizing the active and reserve division structures is discussed elsewhere in this Report;

- The enhanced brigades should report to an active Army command. The active commander would have clear responsibility and authority to oversee training and to ensure the brigades meet their readiness goals;

- The Guard should develop selected early-deploying units that would join the active component. These units do not now exist but they could be built around technologies embodied in line-of-sight-anti-tank and high-mobility, artillery-rocket system technologies. Formed as battalions, they would be valuable components of the total force. They should be prepared to deploy directly from home stations without extensive post-mobilization training to reinforce early-deploying active units. This implies additional full-time manning requirements and offers an opportunity to exploit the concept of an integrated active component/reserve component unit;

- Lighter, more agile forces will play a key role in future combat. Fewer armored forces will be needed. They are simply too heavy to get into the fight in a timely manner and require too much logistical support. Both the active and reserve components should decrease the number of armored units;

- As planned, portions of the current combat forces should be converted to combat service and combat service support units. The ratio between support and combat units in the total force should be adjusted to reflect the actual needs of the Army in meeting its mission requirements;

- In addition to augmenting and supporting active forces for major theaters of war, reserve support units play a vital role in shaping the international environment. Peacekeeping, humanitarian assistance, and similar missions are also important. Some additional reserve or Guard units may be needed to reduce pressure on the active Army.

Second, the Army Guard should provide a smaller Strategic Reserve:

- The Strategic Reserve units should have clear peacetime missions such as support for combined operations in Southern Command or Partnership for Peace training in Eastern Europe. It is the Panel's judgment that the Guard should assume the entire U.S. Army South (USARSO) mission;

- To ensure their continued affordability, the modernization of these forces—accomplished largely through cascading—can be slower than that of higher priority units so long as their equipment permits interoperability with active forces and their employment is in accordance with doctrine.

Third, homeland defense will be a much more important mission in the future:

- The National Guard should continue to provide general-purpose forces to give prompt military support to civil authorities. These forces may need specific additional training—similar to that developed for response to civil disturbance during the 1960s and 1970s—but their primary mission should remain to fight with active forces in combat contingencies;

- The National Guard should also provide forces organized and equipped for training of civil agencies and the immediate reinforcement of first-response efforts in domestic emergencies. They would focus on management of the consequences of a terrorist attack (to include weapons of mass destruction) and natural disasters. They must also be prepared to defend critical infrastructure, including information infrastructure;

- As new homeland defense missions develop (e.g., National Missile Defense and information warfare), the Guard should be used in lieu of active forces wherever possible.

Finally, the Army Reserve must continue to be adjusted as the Army's total force needs change:

- The Army Reserve has undergone a significant transition over the past several years, shifting their forces to combat service support as well as playing a much more active role in peacetime missions. Steps—to include some restructuring of the Reserve—need to be taken now to reduce the Personnel Tempo (PERSTEMPO) problem for certain high demand units;

- The current Army Reserve Institutional Training Divisions should be reviewed to ensure that their structure and responsibilities are consistent with the needs of the Army as it transforms.

A total force, fully integrated, requires a common culture to engender unity of thought and action. Shared operational and training experiences, common educational opportunities, and frequent exchange of leaders between the active and reserve components serve to deepen mutual respect and reinforce a common ethic.

These initiatives will enhance the land component's contribution to our defense. Moreover, they will enable the active Army to engage in the vigorous program of experimentation called for in the Panel's transformation strategy.

Reserve Components

The Panel recommends:

- Expand reserve component roles for use in a variety of ongoing operations.
- Restructure to reduce current reserve component PERSTEMPO.
- Assign reserve units to selected homeland defense missions.
- Assign selected units of the National Guard at battalion and lower levels to active divisions and brigades.
- Maintain equipment interoperability among active and reserve component units.
- Assign consequence management responsibilities to National Guard units.
- Prepare reserve component officers for command positions in the proposed Americas Command.

A TRANSFORMATION STRATEGY

Today, national security leaders face a challenge that is unprecedented: transforming the armed forces into a very different kind of military from that which exists today. Simultaneously, national security leaders must sustain the military's ability to play a very active role in supporting U.S. near-term efforts to preserve global stability within a national security strategy of engagement and enlargement.

Why the need for a transformation strategy? Defense enters this era of geopolitical and military-technical transformation within an environment of declining resources. There is the risk that if the wrong transformation course is chosen (or if no attempt is made to transform), the Department of Defense will find it difficult, if not impossible, to buy its way out of its mistakes. Moreover, it is important to begin the transformation process soon, since decisions made in the near-term will influence the shape of the military over the long-term. Put another way, it is no exaggeration to say that the U.S. military twenty years hence is already being formed by decisions being made today.

Consequently, the Defense Department should accord the highest priority to executing a transformation strategy for the U.S. military, starting now. The Department should begin by recognizing that revolutions in military affairs are characterized by an increased risk of strategic surprise, such as occurred with submarine warfare early in this century and which might occur again with the onset of information warfare, competition in space, and the changing character of power projection.

For a start, the military services will have to tap into rapidly advancing technologies to develop new military systems that can be applied within the framework of new operational concepts executed by new kinds of military organizations. It is this combination of technology, emerging military systems, new concepts of operation and force restructuring that often produces the discontinuous leap in military effectiveness characteristic of revolutions in military affairs. Greater emphasis should be placed on experimenting with a variety of military systems, operational concepts, and force structures. The goal would be to identify those that are capable of solving the challenges that emerge or that are capable of exploiting opportunities—our asymmetric advantage—and to eliminate those which are not. The end result would find the U.S. military having created strategic "options" on a range of military capabilities. These options could be used both to dissuade prospective competitors from undertaking aggressive military competition and, in the event dissuasion or deterrence fails, to exercise one or more of these options to prevail in such a competition.

Transformation will take dedication and commitment—and a willingness to put money, resources, and structure behind a process designed to foster change. Most of all, it will take wisdom to walk the delicate line between avoiding

premature decisions and unintended "lock-in" with equipment purchases, operational concepts, and related systems whose effectiveness may erode precipitously in a rapidly changing conflict environment. Choosing the right alternatives, as threats become clear and technology proves out, must be the goal.

Effecting a military transformation will require a much greater role for jointness. It may also encompass greater competition among the military services, not less. Congress and many military reformers have decried—in many cases, quite rightly—the amount of overlap and redundancy that exists among the four military services. However, competition among the services can assist in determining how best to exploit new capabilities, or how to solve emerging challenges. This kind of competition should be encouraged. In the case of the power projection challenge, for example, it is not clear whether the solution is to be found in Air Force long-range precision strikes; strikes from a Navy task force composed of a "distributed" strike force—carriers, arsenal ships and Trident "stealth battleships" fitted with hundreds of vertical launch systems for long-range precision guided missiles; Army forces employing long range missiles and weaponized, unmanned aerial vehicles; Marine "infestation" teams calling in long-range precision fires; integrated theater missile defenses; or a combination of these capabilities, or perhaps something quite different—all linked by a global command and control information architecture relying heavily on our assets in space.

What emerges from earlier periods of transformation, whether it be the development of naval aviation, or the exploitation of ballistic missiles, is that they take a considerable amount of time, at least a decade, and often closer to two, to play out. Indeed, even those military systems that today are placed on a "fast track" for development and fielding often take ten years or more to reach forces in the field. Additional time is required to determine how best to employ the new military system, and to make the appropriate adjustments in the force structure. If that is the case, then senior Defense Department leaders must begin now to develop and execute a transformation strategy to prepare for the very different kinds of challenges they see confronting the armed forces over the long-term future.

The issue of how to fund this transformation must be addressed. In this fiscally constrained environment, there are significant risks to the Quadrennial Defense Review's (QDR) goal of $60 billion for modernization funding. In its review of the FY98 Future Years Defense Plan (FYDP), the General Accounting Office (GAO) found that the Defense Department has not met its procurement goals for the fourth straight year. There are several reasons that indicate this trend is likely to continue. The increase in Operations and Maintenance (O&M) spending coupled with the decreasing size of the Defense budget has "crowded out" procurement spending. The migration of procurement funds to pay for cost overruns and increased OPTEMPO continues, exacerbating the procurement shortfall. Additionally, Congress's unwillingness to approve any further base

closure rounds has created additional risk to Defense's future ability to fund procurement efforts through infrastructure reform.

Acquisition reform is helping the Department meet its funding problems, but most savings have been used to meet needs of current programs, indicating that few funds will be available for other programs. New acquisition programs have been aggressively budgeted, counting on acquisition reform, making additional savings unlikely. As a result, Defense's ability to fund the QDR force is at risk. While continuing to reduce infrastructure and achieve greater efficiency in the acquisition process is necessary, it is not clear that it will be adequate to provide the requisite resources to fund the transformation to a force equipped and organized to handle the challenges of 2010–2020.

The Panel estimates an annual budget wedge of $5 to 10 billion will be required to support this transformation strategy. This money funds such initiatives as intelligence, space, urban warfare, joint experimentation, and information operations. In the absence of additional defense funding, the transformation could be funded by infrastructure and acquisition reform, reducing the operational tempo associated with non-warfighting activities, canceling acquisition programs, or reducing force structure and end strength. There will be no easy answers, and difficult choices must be made. Some near-term investment challenges must be solved to ensure we can provide the necessary resources.

In this final section of our report we address several recommendations for how we can begin the transformation of our security structure from where we are today to where we need to be in the future. Our outline for this process involves a wide variety of issues and subject areas. First we articulate the need for a broad national security approach to include a review of how we approach and incorporate our allies; the increasing importance of our intelligence community, particularly human intelligence (HUMINT) and analysis; and the need for a much stronger and more effective interagency process. Second, we believe that a formal system of experimentation within the Defense Department must be implemented. Third, we propose revisions to the Unified Command Plan. Fourth, we discuss the need to transform the industrial base. Finally, the Panel recommends that the Defense support structure and infrastructure be fundamentally reformed.

A BROAD NATIONAL SECURITY APPROACH

The National Security Act of 1947 codified the transformation of the United States from an isolationist power to the world's preeminent global power. It created the National Security Council, the Department of Defense, the Central Intelligence Agency, the U.S. Air Force, and the Joint Chiefs of Staff. The Act's organizational changes reflected America's conscious decision to bear the mantle of global leadership in the coming Cold War.

The challenges the United States will face in the twenty-first century differ substantially from those of the Cold War. The collapse of the Soviet Union and the demise of the Warsaw Pact changed the major fault lines of the international political system. At the same time, an ongoing technological revolution has restructured global politico-economic patterns and promises to alter dramatically military operations and the character of warfare. Increasingly sophisticated weapons promise to proliferate advanced warfighting capabilities to anyone with the money to buy them. Existing and emerging security challenges are occurring in an international environment where commercial, financial, cultural, and communication links often transcend geographic borders.

> ***NATIONAL SECURITY STRUCTURE***
>
> *National Security Act of 1947 provided legislative basis for the Cold War, BUT...*
> *opportunities and challenges of twenty-first century will be very different than those of the Cold War*

New national security interests—especially those dealing with space, cyberspace, and information—are vulnerable to attack by other than military means and must be protected. The lines between domestic and foreign policy, intelligence and information, political and economic agendas, and military and law enforcement activities will become increasingly blurred. Many emerging challenges respect no national boundaries and require international cooperation to resolve.

> ***NEW NATIONAL SECURITY CHALLENGES***
>
> - *Vulnerable to unconventional attack*
> - *Blurs military/law enforcement line*
> - *Respects no boundaries*
> - *Requires international cooperation*

New technologies have diminished the importance of geographic distance but increased the importance of time—and, consequently, the ability to respond quickly to emerging problems. In such an environment, being able not only to respond, but also to anticipate and to defuse problems before they reach the point of conflagration, will be more important than ever before to our national security. Today, American military forces aid cholera-infected refugee camps; Marines and National Guardsmen intercept illegal drugs on America's southwestern border; and uniformed Americans separate the warring parties in the Balkans while diplomats, businessmen, and private volunteer agencies try to restore political

order. The future promises to present our national security structure with similar challenges.

We must assume that we are vulnerable to a variety of threats—both military and non-military in nature. We must find a variety of means to foster the resolution of conflicts, preferably before they occur. High on our list must be a way to achieve some measure of control over the proliferation of weapons of mass destruction. To some degree—with Russia, the new independent states, and North Korea—we have made some progress in this regard. But this agenda of "preventive defense" needs further articulation and expansion.

Although the security challenges we face are more diverse, and complex international operations are becoming the norm for our defense forces, our policy-making institutions remain largely as they were during the Cold War. They are largely reactive, highly compartmentalized, inwardly focused on their own missions, and only loosely connected to one another. The national security apparatus established fifty years ago must adapt itself as it takes on a growing list of new challenges and responsibilities. It so far has been unable to integrate smoothly the resources and organizations needed to anticipate and mold a more secure international environment. It has yet to take full advantage of new technologies and the contributions that nongovernment organizations, including businesses and private voluntary groups, and our allies and friends around the world, can make to national security.

> ***NATIONAL SECURITY STRUCTURE***
>
> *Funding shortfalls and coordination gaps among U.S. government agencies impede U.S. crisis response*

This broader approach to national security must look at the best way to change and integrate alliance structures, the intelligence structure, and the interagency process to better employ our forces and capabilities to meet the challenges of the future.

Alliance Structures

Our Cold War alliance structure served the United States well in countering the strategic threat posed by the Soviet Union. Historically, the United States expects certain things from alliances—legitimacy and reliability (political as well as military), augmentation of our military capability, access to forward bases, host nation support, and the benefits of pooling manpower and sharing technology, production capacity, and intelligence information. While these expectations remain, the demise of the Soviet Union and the diffusion of traditional alliance interests raise fundamental questions about the future of U.S. alliance relationships.

> ***ALLIANCES***
>
> *Regional stability through regional partnering*

The Panel believes alliances will continue to be a vital component of U.S. security in the future, notwithstanding our need to maintain some capability for unilateral military action. Future "alliances," however, will be different from those of the Cold War. The internal relationships, geographic focus, and formal structures of alliances must adapt to a new security environment defined by changes in the geopolitical situation, military capabilities, and economic circumstances.

The ongoing geopolitical transformation of the post-Cold War world, while greatly diminishing the overarching, global threat posed by the Soviet Union and the uncertainties about Russia's future direction, has generated diffuse regional threats, some of which may coalesce into major regional opposition to U.S. interests. At the same time, the absence of a major, clear, and common threat may weaken the basis for the relative stability of past alliance structures. Without the perception of real danger to mutual national survival, the commitment to collective defense could be diluted to the level that existed during the League of Nations.

Closely linked to the new geopolitical landscape are changing military realities. Militaries are transforming themselves and thus creating uneven and divergent capabilities even among traditional allies. Communication and other interoperability requirements may become increasingly difficult, even while coalition operations (or operations stemming from ad hoc alliance structures) become more prevalent. The U.S. military will have to seek new avenues for interoperability training with an increasing number of actual and potential allies.

These changes in alliance structure will likely occur in an increasingly resource-constrained environment. In the past, the United States could afford to underwrite any alliance. Although the U.S. economy is still the strongest in the world, our share of global wealth relative to that of our major allies has declined significantly since the early days of the Cold War when our current alliances were formed.

As a result, fiscal burden-sharing will play a greater part in defining our multilateral and bilateral relationships. International arms cooperation can help promote this trend and will also help promote efficiencies in an era of constrained defense budgets. Closer links between the United States and overseas defense and aerospace corporations, especially with those in Europe, can serve both our interests and those of our allies.

> ***ALLIANCES***
>
> *International arms cooperation encourages and complements coalition activities*

But the United States must move beyond traditional alliance structures if it is to meet new security challenges effectively. Although we will maintain and

enhance our long-term, formal alliances, other alliance-like structures will likely become the operational norm.

Alliance-like structures—often called "coalitions of the willing"—will be temporary and their formation ad hoc. Their creation may improve U.S. access to a region but will not necessarily increase U.S. presence. Ad hoc coalitions will come in different forms. For example, in the Gulf War and recent humanitarian operations in Africa, coalitions were created in the absence of an existing regional alliance structure. The Bosnian experience generated special arrangements to incorporate Russian forces into a NATO-orchestrated operation. Another alternative to traditional alliances is bilateral or regional agreements outside of formal alliances, such as those used to combat narco-terrorists in Latin America. Cooperation with transnational commercial organizations may serve as an entirely new avenue for increased regional stability. The effectiveness of many, if not most, of these approaches depends on a deliberate effort to work with prospective allies and coalition partners before crises unfold. Only then can the foundation for successful operations be in place.

As the formal alliance structures of the past evolve, our ability to operate with formal allies or ad hoc coalition partners, or to cooperate with nongovernment or international organizations, will depend increasingly on professional relationships at all levels. To develop these relationships, we must create more opportunities for our military forces to work with allies and potential coalition partners before crises develop.

As we consider the changing character of alliances in the future, we must not lose sight of their purpose: they must improve not only our security, but also the security of our allies. It cannot be a one-sided relationship. An alliance works where there is mutual trust and commitment and willingness to sacrifice for common goals. Not understanding this concept has led some nations in the past down a path to defeat and destruction. In international relations, altruism works best when instigated by self-interest.

The Intelligence Structure

The new and broadened difficulties that will confront intelligence collection over the next twenty years are greater than ever before. The task facing the United States is to determine the intelligence requirements in the world of 2010–2020. In a general sense, we will need the same types of information we use today. We will still want to answer what, where, when, how, and why—the more detailed and accurate the answer, the better. However, the security environment of 2010–2020 will change the context of these questions.

The United States will not have the luxury of focusing most of its intelligence assets on a single threat, as it did in the Cold War. Disparate threats and geopolitical shifts will produce uncertainty and diffusion of effort.

Intelligence collection and analysis must also cover Third World countries. Frequently these are the countries where U.S. forces are called for humanitarian or peacekeeping missions, and where protection of our forces will become increasingly more difficult. At the same time, our national priorities will constantly change as new crises and competitors emerge. As a result, we will need to anticipate threats from a multiplicity of sources even as we deal with a host of current concerns.

Asymmetric threats will be particularly difficult to guard against. Transnational problems and the proliferation of advanced technology and weapons of mass destruction will further exacerbate the difficulty of isolating and tracking various threats. A dramatic decrease in our ability to provide decision-makers or potential victims with adequate warning could result. With American citizens increasingly exposed at home and abroad, such a shortfall could be disastrous.

Advances in information technologies may be a double-edged sword in this new intelligence environment. Improved information systems offer intelligence structure benefits that could significantly increase our ability to produce the necessary intelligence. These systems offer better ways to acquire, analyze, and disseminate information, thereby reducing uncertainty and allowing more timely and accurate decisions at all levels.

Yet, information technology has serious vulnerabilities. Our reliance on these systems makes them attractive targets for deceptive information. Also, we risk becoming over-reliant on this intelligence tool and the sheer volume of information creates the possibility of information overload if the proper filters are not in place. Leaders at different levels need corresponding amounts of detail. Too much or the wrong type of intelligence to the wrong person can paralyze or mislead decision-making.

The Panel believes that certain changes to our intelligence structure and capabilities are necessary if we are to leverage intelligence means and information. Timely dissemination of accurate and complete information to the warfighter is key. Improvements can be made in the collection, processing, analysis, and dissemination of intelligence.

First, the intelligence process must include integrating technologies (especially space-based capabilities), reducing the overlap in intelligence efforts among agencies (without sacrificing the redundancy necessary to safeguard capability), eliminating artificial bureaucratic boundaries that debilitate the dissemination of information, and allowing for surge capacity in times of multiple crises. Beyond lowering barriers among our own agencies and departments, we must consider how to share data with nations beyond traditional alliance structures. Our intelligence relationships abroad should reflect the realities of

today and tomorrow, rather than relying solely on relationships that served us well in the Cold War and before.

Along with improved data sharing, our intelligence structure must use the best technology available to create nodal links that disseminate information and facilitate analysis. These information filters must then aid in analyzing raw data, and information must be archived digitally so that users can easily and rapidly retrieve it. At the same time, the proliferation of this technology to potential enemies promises to increase the difficulty for our collection efforts.

Second, we must improve our ability to collect against technically sophisticated targets. Measurement and signature intelligence (MASINT) will be critical to our understanding of WMD proliferation in the twenty-first century.

Third, we must determine what space, air, maritime, and land-based platforms will best accomplish specific intelligence collection missions. Commanders must be confident about having access to intelligence generated by systems they do not control. At the same time, we must ensure that those assets are reliable and available.

Finally, considering the range of tools available to the United States to cope with intelligence requirements over the next twenty years, the Panel underscores the critical importance of revitalizing human intelligence (HUMINT) to include the need for military personnel with extensive regional knowledge and language skills. Given our lack of experience in and knowledge about certain countries, regions, and groups, HUMINT can provide local data that may prove to be crucial, particularly in helping our leaders understand the intent behind capability. The effective use of HUMINT will help our leaders take the appropriate actions to diffuse conflict and promote regional stability. If conflict should occur despite our best efforts, then HUMINT will complement our other means of intelligence to assist commanders in conducting operations rapidly and decisively.

Revitalizing HUMINT requires the United States to invest in robust capabilities. Such capability will not be achieved overnight; the skills and relationships necessary for effective HUMINT take years to develop. This long lead-time underscores the urgency of defining the requirements and meeting them now.

The Interagency Process

The ability to anticipate and shape changes in the international environment requires a forward-looking national security strategy and effective organization for implementing it. This in turn requires a high degree of integration of resources and political commitment. To make such changes will require significant alteration in the current national security apparatus and the way we do business today. Among the changes that need to be made toward that goal are:

- Undertake a thorough national security strategy review to determine if existing structures and procedures are appropriate to twenty-first century needs. The "21st Century Security Strategy Group," established in H.R. 2266, is an important step in this direction;

- Expand the statutory members of the National Security Council to include the Secretary of the Treasury and the Attorney General;

- Create an interagency cadre of professionals, including civilian and military officers, whose purpose would be to staff key positions in the national security structures. Such a cadre would be similar in spirit to the "joint" experience envisioned by the 1986 Goldwater–Nichols Act. Attention should be given to their education, development, and career development. A certain number of "interagency" slots should be identified within the national security community, including domestic agencies that have foreign affairs responsibilities (e.g., Justice, Commerce, Energy) and staffed by the interagency cadre. Assignment of allied and other foreign nationals from countries with whom the United States has security cooperation arrangements should also be considered on a reciprocal basis;

- Establish a national security curriculum, combining course work at the National Defense University and National Foreign Affairs Training Center, with a mix of civilian, military, and foreign students to receive training and education in strategic affairs;

- Establish a fully integrated national crisis center to consolidate foreign policy, intelligence, military representatives, and domestic agency personnel, including liaison with state and local authorities; it should include "hotline" links to allies and major regional powers, international organizations, and nongovernment organizations;

- Develop a unified, multimedia communication system (both secure and unclassified) to overcome the lack of interoperability of today's systems. Such a system would facilitate the real-time exchange of information necessary for decision-making and coordination in the

complex security environment of the future. Plan to extend that system to local and regional domestic government agencies as well as to key allies;

- Improve coordination between State and Defense Department geographic and functional bureaus and unified commands to harmonize and integrate regional coverage and policy implementation;

- Modify current legislation to streamline the transfer of funds within and among agencies in the national security community, allowing decision-makers to provide resources to the agency or agencies best suited for the task;

- Establish an interagency long-range, strategic planning process to ensure the long-term consequences of near-term decisions are taken into account. The process should be supported by long-range strategic planning cells in the National Security Council staff, the Departments of State and Defense, and other relevant departments and agencies.

A Broad National Security Approach

The Panel recommends:

- Adapt future alliances to a new security environment.
- Investigate new avenues for interoperability, including closer links between U.S. and overseas defense companies.
- Ensure timely dissemination of accurate and complete information to the warfighter.
- Revitalize human intelligence (HUMINT).
- Review the entire national security structure to better anticipate and shape changes in the international environment.
- Expand the statutory members of the NSC.
- Establish a cadre of interagency professionals.
- Establish a fully integrated, national crisis center.
- Develop a unified, multimedia, communications system.
- Streamline the transfer of funds within and among agencies.

INSTITUTIONALIZING INNOVATION, EXPERIMENTATION, AND CHANGE

Far from complete, the broad inquiries into the character of future conflict being pursued by a number of agencies and service components suggest that there are fundamental changes on the horizon that need to be understood. Conflicts in the infosphere and space, for example, will have dramatic impacts on traditional means of conventional combat. These impacts, as well as others mentioned in this Report, cannot be separated from the considerations of conducting future wars.

We can try to understand the future through a variety of approaches. We have already begun extensively to "wargame" (i.e., "play out" different and random scenarios in a conference-type atmosphere) the future. But some things can only be revealed in "the field." Practical experimenting allows us to experience what may only be theorized at the discussion table. It is only through field exercises, primarily joint in nature, that we can adjust and iron out problems before they occur in actual combat.

It is possible to explore future concepts now, using well-planned and resourced exercises, surrogate and real technologies, and advanced distributed simulation. Although each service may be interested in doing experiments to examine its own role in the future, the real leverage of future capabilities from experiments is in the joint venue.

This type of experimentation and follow-through will only be found in an energetic and innovative laboratory that tests operational concepts, doctrinal innovations, and new forces and equipment in a field environment under realistic conditions. As discussed in the following section on the Unified Command Plan, the Panel recommends the creation of a Joint Forces Command, which would be given appropriate resources, requirement authorities, and forces (detailed by the individual services) and expected to create challenging scenarios and regular field exercises conducted under the aegis of a Joint Battle Lab. The Joint Battle Lab would be subordinated to the Joint Forces Commander.

- At the head of this institutionalized experimentation process would be an accountable Joint Battle Lab headquarters.
- Exercises would take place at joint national training centers—part of which would be a Joint Urban Warfare Center—accommodating all of the services.

INSTITUTIONALIZING CHANGE

- *Joint field tests essential*
- *Joint Forces Command responsible*
- *Joint Battle Lab headquarters established*
- *Integrate service battle labs*
- *Establish joint national training centers*

- The exercises, utilizing scenarios developed by a Joint Concept Development Center (JCDC), would be based on the emerging challenges of 2010–2020 identified by the Panel. The staffing of JCDC and joint battle labs should be under the same parameters that identified the Joint Staff Officers in Title IV of the Goldwater–Nichols Act. The JCDC would monitor exercises, to include determining new measures of merit (or effectiveness) for forces engaged in such exercises. The JCDC would also evaluate the adequacy of current analytic methodologies, models, and simulations. This would address a serious shortcoming identified by the Panel in its report on the Quadrennial Defense Review.

Maximum use should be made of the services' battle laboratories. Current joint warfare centers—the Joint Warfare Analysis Center (JWAC), the Joint Command & Control Warfare Center (JC2WC), the Joint Warfighting Center (JWC), and the Joint Doctrine Center (JDC)—would report to the Joint Forces Commander.

These centers would assist in the development of scenarios, new strategies, task force objectives, and desired outcomes, measures of merit/effectiveness, analysis of experimentation results, and the development of follow-on experiments. Furthermore, regional unified commanders-in-chief (CINCs) and the Joint Chiefs should endorse cross-service cooperation and the use of service battle labs, test ranges, development laboratories, and training facilities, where possible, to advance the joint warfighting effort.

The Joint Forces Commander would submit an annual report to the Secretary of Defense detailing the conduct of joint exercises, including their number, forces involved, the operational challenges they faced, the exercise results, and the effect of the exercise on the transformation process, to include recommended changes in force structure, doctrine, and resource allocations.

These recommendations do not seek to limit individual service innovation in any way. Such service-specific innovation is a key component of the military's transformation strategy. For example, the services would experiment with such weapon systems as the arsenal ship, which, once certified, would be tested in the broader joint arena. The Joint Forces Command and the associated steps recommended above offer a systemic, joint environment in which to develop the integration of all of the components of a joint campaign.

The U.S. military today has a commanding advantage in military capability. But in a period of great geopolitical and military–technical change and uncertainty, it is far from clear that this advantage will be sustained over the long term. If, as seems likely, we are in the early stages of a revolution in military affairs, it will yield new challenges for the U.S. military and new opportunities. A

successful transformation strategy must provide for frequent and large-scale (i.e., at the operational level) experimentation in potentially new ways of war, effecting meaningful and appropriate change in operational concepts, force structures, military systems, and budgets.

The Panel believes that the Secretary of Defense should consider providing MFP 11-type authority to ensure the Joint Forces Commander's ability to support the experimentation program.

Institutionalizing Change

The Panel recommends:

- Create a Joint Battle Lab for experimentation and joint exercises.
- Establish a Joint National Training Center.
- Establish a Joint Urban Warfare Center.
- Establish a Joint Concept Development Center.
- Integrate existing service battle labs and facilities.

TRANSFORMING THE UNIFIED COMMAND PLAN

The Panel's concept of transforming our forces to address challenges during the next twenty years will require institutional and organizational changes. Recognizing the need to maintain regional stability, defend the territorial integrity of the United States, and exploit new warfighting capabilities, the Panel recommends changes to the Unified Command Plan. They include significant changes to the functional commands to incorporate new mission capabilities and some restructuring of the geographic commands.

In its 1995 report, the Commission on Roles and Missions of the Armed Forces recommended key underlying principles to guide the Unified Command Plan. They included the ideas that geographic responsibilities should correspond to the strategic interests of the United States; that sufficient land, air, and sea area be included in each geographic command to allow the commander the means to meet his responsibilities; that the distinctions between geographical and functional commands be maintained; and that no seams exist that might split areas of strategic interest. The National Defense Panel endorses those principles and used them to determine its recommendations for realignment of the commands.

The Commands would be adjusted as follows:

- **Strategic Command** would continue to meet its current responsibilities as long as nuclear forces remain an essential element of our strategy.

- **Special Operations Command** would continue to perform critical missions to maintain global stability and counter evolving challenges by transnational threats, including weapons of mass destruction. We expect a modernized Special Operations Forces will play a key role in containing the transnational threats to U.S. interests, both at home and abroad.

- **Joint Forces Command** would be the common force provider of combat-ready forces to all other commands for joint and combined operations. This command would be responsible for the force readiness and training of all active and reserve components based in the United States. This command would be responsible for developing and validating joint doctrine for the approval of the Joint Chiefs; conducting joint experimentation; directing joint battle laboratories; and overseeing other joint innovation and experimentation efforts described elsewhere in this Report. The Joint Forces Command is responsible for all joint modeling, simulation, analysis, and concept development. The command is responsible for driving the transformation process (joint requirements approval) for U.S. forces. Since Joint Forces Command provides forces to all other commands, it

must ensure that the provided forces possess the appropriate cultural and political awareness of the specific regions to which they will be deployed.

- **Logistics Command** would provide global logistics, transportation, and asset visibility operations. This command would improve our ability to more rapidly project forces with smaller logistic footprints, to leverage industry innovations, and to improve and reengineer business practices. This command, providing common supply items, global distribution, and transportation services, would integrate the transportation missions of Transportation Command and the logistic missions of the Defense Logistics Agency.

- **Space Command** would expand the use of space and information to implement a vision of global awareness, integrated space operations, and information superiority. CINCSPACE would be responsible for providing global infrastructures for the geographic commands. The Defense Information Systems Agency would be transferred to Space Command and become one of its subordinate commands. Space Command would be responsible for managing information infrastructure on a global scale and providing support and immediate access by combat commanders.

The five geographic Unified Commands would be adjusted as follows:

- **Americas Command** would include the United States, Canada, Mexico, Central America, the Caribbean Basin, and all of South America. The Americas Command would be responsible for the ocean approaches to the United States throughout the Maritime and Air Defense Zones. Its primary missions would be to defend the Americas from foreign threats, deter the use of weapons of mass destruction against the United States, and build cooperation among the nations of North, Central, and South America. Southern Command would be a subordinate command. A Homeland Defense Command, also a subordinate command, would be created for such missions as augmenting border security operations, defending North America from information warfare attacks and air and missile attacks, and augmenting consequence management of natural disasters and terrorist attacks. The North American Aerospace Defense Command would be transferred from CINCSPACE to CINC Americas Command. United States Atlantic Command would be disestablished. The responsibilities of Supreme Allied Commander (Atlantic) logically would be assumed by the commander of the Atlantic Fleet. The Panel recommends that, given the essential role of the Guard and other reserve components in these commands, the Deputy Commander Americas Command or Commander, Southern Command or Commander, Homeland Defense

Command be drawn from the reserve components. To reflect the broader scope of responsibilities and establish a clear chain of command, the Military Support to Civil Authorities (MSCA) mission should be transferred from the Department of the Army to the Americas Command.

- **European Command** would be extended to include Russia, Estonia, Latvia, Lithuania, Moldova, Ukraine, Belarus, Georgia, Armenia, and Azerbaijan. European Command would also assume responsibility for Egypt, Jordan, and Sudan.

- **Central Command**, focused on the oil sources of the Persian Gulf and the Caspian Sea, would include its current responsibilities less Pakistan, Egypt, Sudan, and Jordan and would expand to include Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, and Tajikistan.

- **Pacific Command** would maintain its current responsibilities and assume responsibility for Pakistan.

Transforming the Unified Command Plan

The Panel recommends:

- Maintain Strategic Command and Special Operations Command.
- Create Joint Forces Command to provide combat ready forces for joint and combined operations.
- Eliminate U.S. Atlantic Command.
- Create Logistics Command to provide global logistics, transportation, and asset visibility operations.
- Add the information support mission to the responsibilities of Space Command.
- Create Americas Command; subordinate Southern Command.
- Realign European, Central, and Pacific Commands.

TRANSFORMING THE INDUSTRIAL BASE

In the twenty-first century, the United States will depend increasingly upon a global technology base for the product and process technologies needed for the development of future defense systems. This technology base will also have a strong commercial orientation, since civilian technologies are likely to offer their services to the highest bidder. Efforts to restrict the flow of technology across sovereign borders will be increasing difficult. The Panel believes that broad-based technology control regimes are likely to be futile, while control of specific military-unique technologies will become more important.

The Panel recognizes that a world that provides all nations with more or less equal access to defense-related technologies poses special challenges for the United States, which will continue to base its national strategy and global position on the technological superiority of its military forces. In coming decades, the United States can only preserve its current technological advantage through time-based competition: the ability to rapidly develop and deploy military applications of commercial technologies. System-development lead times, which now average well over a decade or more for major systems, must be dramatically reduced. Failure to make significant progress in this area will jeopardize our technological edge, a key component of our national strength.

The Department of Defense also must devote adequate research and development resources to establishing and preserving the nation's preeminence in the design, integration, and operation of "systems of systems," or systems architectures. In an age of "technology leveling," leadership in system architecture is likely to become a key source of national advantage. Leading-edge capabilities in this area are a prerequisite for the full implementation of the revolution in military affairs. A current U.S. advantage is the integration of commercial dual-use technology with military unique technology. Continuing to advance these military-unique technologies is critical to maintaining military superiority and preventing technological surprise.

> ***INTEGRATE TECHNOLOGIES***
>
> - *Pursue Commercial-Off-The-Shelf (COTS) opportunities*
> - *Exploit dual-use technology*
> - *Identify and protect military-unique needs*

Encouraging Innovations

In recent years, the U.S. defense industry has undergone a dramatic restructuring, resulting in the emergence of a small number of large contractors with diverse and extensive technology capabilities. These large corporations have the resources and capabilities to play an instrumental role in making the revolution in military affairs a reality. However, the Department of Defense should take appropriate measures to ensure that these firms remain subject to adequate competitive forces, a key to efficiency and innovation.

Innovation is not an automatic product of R&D activity organized under labels like Skunkworks or Advanced Concept Technology Demonstrations (ACTDs). The engine for innovation has often involved the existence of a well-understood challenge arising from:

- An external threat (e.g., the Soviet Union in the past);
- An unsolved state of the art critical mission/requirement (e.g., detecting quiet submarines);
- An unexploited breakthrough technology having vast military potential (e.g., SAR imagery);
- A company's motivation to win a competitive procurement; or
- Intra-company incentives such as budget, prestige, promotion, or perks.

When these challenges for innovation exist and are publicly recognized, the best engineers and scientists flock to the defense industry; when the challenges are lacking or clouded, the commercial world attracts the best engineers. We need to foster innovation to meet the emerging challenges of 2010–2020. The Department of Defense therefore has to develop an acquisition environment that both rewards innovation and penalizes pedestrian efforts and products.

The Acquisition Process

A responsive, efficient acquisition process is also an essential element of the transformation strategy. Over the course of the Cold War, the Defense Department developed a complex and lengthy process to acquire new weapons. In order to validate a new requirement one must demonstrate a new threat to be countered. The process is optimized to avoid error, rather than encouraging the exploration of new concepts and ideas.

As noted above, the Panel recommends an acquisition strategy that is designed to foster innovation and to enable new technology to get to the field quickly. It would direct development and fielding of a small number of units of new weapon systems, avoiding large infrastructure investments and long, high rate production runs until new systems are validated.

Ultimately, Defense must reform the way it acquires systems. An important element of this would be heavier reliance on commercial practices including off-the-shelf technology. This requires further modifications of the acquisition regulations.

Joint tests, Advanced Concept Technology Demonstrations (ACTDs), and other experiments will serve as the front end of this process in most instances. The system must permit us to quickly produce small numbers of promising new platforms and equipment, modifying them as we employ them, but providing our forces with significant cutting edge military capability.

Department of Defense procurement rules should also be reviewed to ensure that all competitive levels, including smaller and start-up firms, are able to participate in the defense marketplace. The involvement of these companies, as well as foreign firms (especially those partnering with U.S. firms), in the competitive process for meeting Department of Defense research and development and procurement requirements can be an important source of innovation for the Department of Defense in the coming century.

But today's acquisition process is the product of fifty years of Cold War. It is a complex and lengthy process and is consciously reactive. Our current acquisition approach is predicated upon a Cold War wartime footing reinforced by the Korean and Vietnam Wars. We should be operating today under peacetime rules. Historically, during peacetime, large-scale production commitments are made under four conditions:

- War is perceived as imminent and the country is determined to field the best available weapons in quantity, (e.g., the WWII decision to build 50,000 aircraft per year);
- A technological plateau is reached, and no potential adversary could field a "trumping" system, (e.g., the Dreadnought class battleship);
- A current design is so successful that it can be evolved to meet new requirements, (e.g., the F-4 Phantom series); or
- We face block obsolescence of a key system.

The Department of Defense needs to provide industry with incentives to innovate so that we may maintain a qualitative technology edge so that the United States will continue to be preeminent in military technology. Rather than being reactive, we should make our military acquisition process proactive. The Department must work with Congress to devise new rules and policies that emphasize technology development and de-emphasize the need for large production quantities in order to recover cost and profit. This may create "sticker shock" on a unit-cost basis but if we can shorten the development cycle, development costs will be much lower. Moreover, reduced production quantities will reduce total program cost, which is a more relevant measure of the cost to the nation.

Mobilization

Closely related to the Cold War acquisition process is the manner in which we have treated mobilization in our planning processes with respect to forces, acquisition, infrastructure, and manpower. A mobilization system that allows us to call up forces and simultaneously produce the industrial means with which to conduct war has been a great strength of the United States. Its meaningfulness in the 2010–2020 time frame, however, is unclear. Technology, commercial developments, required manpower skills, transnational interrelationships, and the phenomenal expansion of information capabilities bring into question the applicability of traditional mobilization structures.

First of all is the question of balance. Within DoD programs, careful review will find that we make mobilization provisions for some items while others, notably new acquisitions and readiness, go begging for resources. In our future environment, it is more important to have a weapon on hand in adequate quantities than to have the capability available to produce that weapon six months or a year later.

Second is timeliness. Should a hostile peer competitor emerge, then we should make appropriate policy decisions at that time, including mobilization preparation within a sufficient lead-time, in order to be ready if hostilities break out.

Third is relevance. In these times of rapid technological advancement, neither stored weapons, materials, parts, nor manpower are necessarily relevant to the mobilization needs of future warfare.

Fourth is synchronization. Both equipment and manpower should be available for mobilization to satisfy CINC warplans. It makes no sense to have manpower assigned to mobilization units if there is no equipment nor to provide equipment for mobilization purposes without the manpower or without sufficient equipment for active components.

Given these four criteria, the Panel believes that Defense should scrub through programs and reconstitute policy and programming requirements to eliminate unnecessary cost associated with obsolete mobilization concepts.

Transforming the Industrial Base

The Panel recommends:

- Achieve and maintain technological superiority through time-based competition.
- Pursue commercial-off-the-shelf opportunities.
- Exploit dual-use technologies.
- Identify and protect military-unique technologies.
- Encourage new enterprises (as well as established firms) to develop innovative ideas—and penalize pedestrian efforts.
- Develop new rules and procedures that emphasize technology development and de-emphasize large production quantities.
- Review mobilization policy for balance, timeliness, relevance, and synchronization.

TRANSFORMING INFRASTRUCTURE

The Infrastructure Problem

Fundamental reform of the Defense Department's support infrastructure is key to an effective transformation strategy for the years 2010–2020. Today, the Department of Defense is burdened by a far-flung support infrastructure that is ponderous, bureaucratic, and unaffordable. Unless its costs are cut sharply, the Department will lack the funds to invest in the future.

To a large extent, the Department of Defense support structure is a holdover from the Cold War. It consists of an extensive network of facilities, headquarters, and agencies located primarily in the continental United States that support combat forces and other deployable units. The support infrastructure includes the Office of the Secretary of Defense, joint and service headquarters organizations, defense agencies, industrial and engineering activities, distribution depots, commissaries and exchanges, medical facilities, dependent schools, and other support assets. Much of the structure is predicated upon maintaining an industrial and manpower mobilization base inappropriate to the relatively short wars we expect in the future or the short technological life-cycle we experience today and certainly will experience in 2010–2020.

> ***INFRASTRUCTURE—THE PROBLEM***
>
> *Excessive Cold War infrastructure costs divert resources from modernization and readiness*

The Department of Defense spends too much on this infrastructure and receives too little for the investment. According to the General Accounting Office, the Department devoted $146 billion in FY97, almost 60 percent of total budget authority, to defense support activities. The proportion of departmental resources devoted to infrastructure support has increased in recent years, since force structure reductions have significantly outpaced the decline in the support structure. This imposes a financial drain, undermining the fundamental viability of the nation's combat forces. Excessive support costs divert funding from procurement and research and development, and barring reform, the Department will almost certainly lack resources to fully implement planned modernization programs and fund other needed investments.

Moreover, Defense support services are often inferior to those available in the private sector. For example, compared to commercial, world-class customer support organizations, the Defense supply system takes too long to deliver parts to its customers, fails too frequently to properly fill orders, and has difficulty tracking items in transit. Department depots take much longer than commercial maintenance facilities to repair aircraft,

> ***SUPPORT SERVICES—THE PROBLEM***
>
> *Department of Defense support services are often inferior to those in the private sector*
>
> *time—tracking—quality—spares*

and tend to deliver those aircraft in less reliable condition. Because of chronic lack of maintenance resources, the Department's housing stock has significantly deteriorated, affecting the quality of life of thousands of military families.

Defense initiatives to improve support services and consolidate its infrastructure often have been fragmented or incomplete. For example, the base realignment and closure process (BRAC) has resulted in the scheduled closure of ninety-seven major domestic bases—representing only twenty-one percent of installation capacity, compared to a Department force structure drawdown of more than thirty percent. Despite some progress in contracting out commercial-oriented functions, many support functions, such as data processing, equipment maintenance, individual training, and dependent medical care, continue to be performed by hundreds of thousands of government personnel despite any compelling military rationale for this in-house overhead.

Department of Defense managers have little personal incentive to aggressively pursue opportunities for infrastructure streamlining and cost reduction. Such actions are often unpopular among the local workforce, and the Comptroller frequently seizes projected savings before efficiencies are realized. Thus, the current system is heavily biased against innovation and change—and encourages the continuation of inefficient and ineffective business practices.

Principles of Infrastructure Management for 2020

The Panel supports the infrastructure initiatives put forward in the recently published Defense Reform Initiative. However, the Panel believes more can and should be done. The Department should shift its strategy for reforming the defense support structure to a "bottom-up" approach that empowers managers at all levels with greater capability and authority to make common-sense decisions for the benefit of the Department. The following are key elements of this new paradigm:

- **Cost Visibility/Accuracy:** Accurate cost information is a prerequisite for improved resource allocation decisions. The Department should develop financial systems that help managers identify inefficient practices and target areas for process improvement;

- **Positive Incentives:** The Department of Defense must establish credible mechanisms to ensure that at least a portion of the savings achieved through streamlining efforts is retained by the local organization for its own use, and that "savings" are not taken from activities before reforms are fully implemented;

- **Choice and Competition:** Choice and competition motivate individuals and organizations to seek innovative approaches to

meeting customer needs. Increasing the role of competitive forces in the delivery of support services would be essential to achieving lower costs and improved service quality;

- **Resource Flexibility:** Under current budget rules, Defense managers have little flexibility to shift resources to make common-sense trade-offs or to respond to unanticipated requirements. Greater flexibility in resource management would encourage innovation and process improvement throughout the Department;

- **Civil/Military Integration:** Defense personnel should be integrated into their local communities, using commercial services to the maximum extent. This departure from the traditional concept of the isolated, self-sufficient military base gives military personnel greater responsibility for their own affairs and fosters civilian society's understanding of the military.

Improvement Opportunities

To develop a more responsive and cost-effective support structure, the Department of Defense must apply the above broad principles to key components of the defense infrastructure. While many of the issues discussed below are contentious, the Panel urges the Department and Congress to establish a partnership to develop and aggressively implement far-reaching reforms. Priority areas for improvement include resource management, force management, installations and personnel support, and industrial and engineering support.

Resource Management

The Department's approach to managing its resources requires fundamental restructuring. The current process trivializes management, forcing officials to spend most of their time and energy on relatively unimportant problems. Meaningful reform of the Department of Defense support infrastructure is not possible unless the Department establishes a more effective and business-like approach to resource management.

PPBS: The Planning, Programming and Budgeting System (PPBS) has evolved into a rigid and bureaucratic process that has transformed Pentagon operations into an endless series of budget drills—to the detriment of strategic planning and sound management. A large portion of the Secretary and service headquarter staff positions exist primarily to support the cumbersome process. Moreover, the system "locks in" the services to programmatic and funding decisions several years in advance—regardless of changing circumstances. The Panel recommends that the Department fundamentally reorganize its planning,

programming, and budgeting processes to enhance its agility, efficiency, and effectiveness.

In particular, planning needs more focus. Since its creation in the early 1960s, critics have pointed out that the first 'P' is silent. To this end, the Panel recommends the establishment of a disciplined long-range planning process that extends beyond the FYDP. Currently, the Defense Department does not have a long-range plan to merge fiscal reality with Congressional, service, CINC requirements, and future plans. Fiscal rigor does not extend beyond the period of the FYDP. At a minimum, the services must be held to reasonable degrees of rigor in the out-year program. The force structure each service plans to support must be sustainable within its budget share, as allocated by the Secretary of Defense.

"Color of Money": The Department of Defense must work with Congressional support to eliminate or relax "color of money" restrictions. Currently, budget rules require the Department to assign funds to numerous separate accounts and subaccounts. To make cost-effective decisions and respond to changing needs, Department of Defense managers need the flexibility to shift funds between accounts. Instead of highly detailed budgets, local organizations should only be required to spend minimum funds in various program categories and be able to devote the remaining resources to areas that are most likely to maximize mission effectiveness.

Cost Visibility: Access to accurate cost information is a prerequisite for cost-effective resource management decisions. Today, Department accounting systems are designed to support the Federal budget process and control obligations. They provide little insight into the true costs of operating defense installations or delivering specific support services. Without good cost data, Defense managers have difficulty identifying inefficient practices and unwittingly make suboptimal resource allocation decisions.

In many respects, the establishment of reimbursable funding mechanisms, such as the Working Capital Funds (WCF), represents an effort on the part of the Department of Defense and the military departments to provide improved cost visibility for both customers and suppliers of support services. However, the WCF rates do not accurately reflect the cost of service delivery, since they often include substantial surcharges and are subject to administrative manipulation. In addition, the Defense customer usually has no choice but to buy from the monopoly provider, further reducing the value of WCF.

The Panel recommends that the Department accelerate the deployment of financial management systems in Defense support organizations with strong activity-based costing capabilities. Such systems enable managers to understand true costs, identify inefficient practices, and target areas for process improvement. The WCF should also be restructured to more accurately reflect full service costs,

which would improve resource management decisions.

Although the Defense Reform Initiative recommends competing the 150,000 positions, the Department employs approximately 600,000 military and civilian personnel who perform commercial-oriented support tasks that have little direct impact on military preparedness. In many cases, private vendors could provide these support services more cost-effectively. To transform the defense infrastructure, the Panel believes the Department should subject all commercial-oriented positions to public versus private competition. On the basis of past experience, when such functions are competed, the Department saves an average of 30 percent—even if the government entity wins the competition—and service improves. It is estimated that opening all of the Department of Defense's commercial-oriented positions for competition would result in recurring annual savings of $10 billion. We recognize that some of these savings have already been included in the Defense program but are convinced that further substantial savings can be made. To achieve these savings, improvements in the competitive process are needed to provide a level playing field.

Installations and Personnel Support

This infrastructure category includes the Defense facilities and services devoted to the day-to-day support of uniformed personnel and/or their dependents: government housing, base support services, dependent schools, commissaries and exchanges, and medical services. Military retirees and their families may also benefit from these support services.

New "Base" Concept: Traditionally, the Department of Defense has operated its major domestic bases as relatively isolated, largely self-contained military communities. A paternalistic culture that provides on-base housing, health care, entertainment, education, and family support services to military personnel, their dependents, and nearby retiree families has been the result.

This approach may have been appropriate when U.S. military forces typically were based in isolated and/or frontier environments. However, most military bases are now located in areas with vibrant civilian communities that offer a full range of support services. Military personnel already depend on the local economy for many services; for example, two-thirds of military families live off the base. This network of full-service installations is expensive to operate and maintain—especially during periods of force structure reductions.

In the view of the Panel, the services should reconsider the traditional concept of the military base. Rather than using on-base housing, commissaries, and other support services, military personnel would receive additional compensation. This shift would allow the services to reduce their investment in on-base facilities and services, permitting an increase in the benefit provided. According to a recent Center for Naval Analyses study, military personnel

currently living in on-base housing could significantly improve their quality of life if the Defense Department allowed them to use housing construction and maintenance funds to find their own accommodations in the civilian economy. The integration of military personnel into the local community may also foster greater individual responsibility and a civilian society's greater appreciation of the military.

Installation and Facility Consolidation: To reduce the cost of maintaining the defense infrastructure, the Department of Defense must minimize the number of surplus facilities and installations under its direct control. While four previous base realignment and closure (BRAC) rounds have reduced installation capacity by twenty-one percent, base consolidation has not occurred as rapidly as the reduction of force structure, personnel, or workload. Recurring savings from previous closure rounds have averaged about $1.4 billion, with up-front investment costs (relocation, environmental clean-up, etc.) totaling about $4 billion per round.

> ***EXCESS BASES***
>
> - *Support the Defense Reform Initiative for two additional BRAC rounds*
> - *Accelerate base closure schedule*

As the Defense Reform Initiative stated, recent analyses indicate that there is sufficient surplus capacity for two additional BRAC rounds, equal to the average of the previous rounds. However, these calculations are based on the continuation of a service-oriented base structure that maintains extensive duplication across military departments. The Panel strongly endorses the conclusion that the move toward joint installations—such as the development of joint industrial activities, R&D facilities, or test ranges—would make possible further major consolidations of the defense infrastructure. This movement should be expanded to include joint operational bases (e.g., joint air bases), which we believe will result in the identification of even more over-capacity.

Recently, Congressional concerns regarding the integrity of the base-closure decision process have precluded further consolidation. The Panel strongly urges Congress and the Department to move quickly to restore the base realignment and closure (BRAC) process. The next round might be preceded by an independent, comprehensive inventory and evaluation of all facilities and installations located in the continental United States. This review would provide the basis for a long-term installation master plan that aligns infrastructure assets with future military requirements, and provides a framework for investment and reuse strategies. This approach would depoliticize the base-closure issue to the extent possible and establish a common reference point for future closure decisions, thus enabling base closures earlier than the current 2001/2005 Department proposal.

Industrial and Engineering Support

Industrial and engineering support, the largest infrastructure category, includes the naval shipyards, maintenance depots, research laboratories and test ranges operated by the military departments. This category also includes the supply depots operated by the military departments and Defense Logistics Agency (DLA).

Depot maintenance: The Department of Defense is not an efficient or effective manager of industrial activities and should get out of this business to the extent possible. The Panel urges the Congress to provide legislation that removes statutory barriers to a greater private sector role in Defense depot maintenance. For example, the Department should continue to seek the revision of 10 U.S.C 2464 and 10 U.S.C 2466 to allow capable and reliable contractors to perform mission-essential depot maintenance work. Restrictions, such as the 50/50 requirement, should be removed because these mandates result in inefficient allocation of Defense maintenance resources. The Department of Defense should accelerate public vs. private competitions for existing systems, ensuring a level playing field for all bidders, and move to contractor logistics support for new systems. Some residual, organic depot capability should be retained to maintain legacy weapon systems, which the private sector can or will no longer support.

Defense Labs: A series of studies over the past few years have demonstrated the need for a substantial restructuring and reduction in the size of the Defense laboratory system. These proposals should be implemented promptly.

Future Vision

In the twenty-first century, as velocity increasingly dominates mass, the Department of Defense must embrace a new paradigm for providing effective combat support services. This approach must fully leverage the capabilities, technologies, and business practices of the commercial sector, adapted to the unique mission and special circumstances of the military environment. The result will be a lighter, leaner, more flexible defense infrastructure that ensures military readiness at significantly reduced costs.

> ***INFRASTRUCTURE—KEY OBJECTIVE***
>
> *Transform infrastructure from an impediment to a cost-effective enabler of readiness and modernization*

To achieve this vision, a fundamental transformation of support structure functions must be a priority. Such a transformation can be achieved only if the Department of Defense and the military departments are willing to consider dramatic changes that fully leverage innovative business practices and technologies. Without fundamental change, the defense infrastructure will continue to divert precious resources from modernization and readiness, and

ultimately threaten the ability of the United States to utilize military power in support of national security objectives.

Transforming Infrastructure

The Panel recommends:

- Support infrastructure proposals of the Defense Reform Initiative.
- Reduce or eliminate Cold War infrastructure without delay.
- Develop financial systems that give commanders cost visibility.
- Change the budgeting process to create incentives to foster savings initiatives.
- Pass legislation to allow flexibility in resource reallocation.
- Revamp PPBS to facilitate innovation and change.
- Compete all commercial-oriented activities.
- Consider the "New Base Concept."
- Accelerate and expand the scope of BRAC 2001/2005.
- Develop a Department of Defense Installation Master Plan.

CONCLUSION

In the increasingly complex and dynamic world that we foresee, the Department of Defense and its armed services alone cannot preserve U.S. interests. Defense is but one element of a broader national security structure. If we are to be successful in meeting the challenges of the future, the entire U.S. national security apparatus must adapt to become more integrated, coherent, and proactive.

Although aggressively transforming our military may present some risk, the Panel believes that risk is both acceptable and manageable. At any point during this transformation process, we should be able to handle any and all major combat operations—and make it apparent to a potential adversary that we can, and will.

Implementing a transformation such as described in this Report promises to be complicated and will require a delicate balance. We must be careful not to dismantle elements of the current structure that are still applicable to near-term challenges. The Panel believes that if we refuse to change in a timely manner, however, we risk being fundamentally unprepared for the future, thereby putting in question the security of future generations of Americans. We have the time and the opportunity to adjust. But we cannot equivocate. We must begin now.

GLOSSARY

AAN	Army After Next
above the line force structure	The force structure (including numbers, strengths, and composition and major items of equipment) for the Armed Forces at the following unit levels: (A) In the case of the Army, the division. (B) In the case of the Navy, the battle group. (C) In the case of the Air force, the wing. (D) In the case of the Marine Corps, the expeditionary force. (E) In the case of special operations forces of the Army, Navy, or Air Force, the major operating unit. (F) In the case of the strategic forces, the ballistic missile submarine fleet, the heavy bomber force, and the intercontinental ballistic missile force.
asymmetric	The property of being dissimilar in nature to its counterpart; not a mirror image. In military parlance, the opposition of two unlike forces who seek to gain advantage over the other by differing applications of power.
AWE	Advanced Warfighting Experiment
BRAC	Base realignment and closure
centers of gravity	Those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight.
CINC	Commander In Chief
CINCSPACE	Commander In Chief, U.S. Space Command
CJCS	Chairman of the Joint Chiefs of Staff

counterproliferation	The full range of actions by the U.S. government to deter, delay, halt, or roll back the proliferation of weapons of mass destruction (WMD) and their delivery systems. Counterproliferation efforts are associated with the following seven functional areas: 1) proliferation prevention; 2)strategic and tactical intelligence; 3) battlefield surveillance; 4) counterforce; 5) active defense; 6) passive defense; 7) counterterrorism.
CVX	Future class of aircraft carrier
cyber-assault	Attacks on or through cyberspace
cyberspace	1. The Global Information Infrastructure. 2. That aspect of the area of conflict composed of the electromagnetic spectrum and non-human sensing dimension in which stealth-masked forces either stage attacks or seek refuge from them.
cyberterrorism	Acts of terrorism committed through cyberspace.
deterrence	The prevention from action by fear of consequences brought about by the existence of a credible threat of unacceptable counteraction
DoD	Department of Defense
DoD Directive 5100.1	The document that promulgates the responsibilities and functions of the Department of Defense.
FYDP	Future Years Defense Program
GAO	General Accounting Office
Goldwater-Nichols Act of 1986	Legislation for defense reform championed by Senator Barry Goldwater and Congressman Bill Nichols that sought to bestow greater autonomy and responsibility to the warfighters leading the unified and specified commands. More particularly, it emphasized the civilian authority of the Secretary of Defense, improved military advice provided to the President and the National Security Council, and placed clear responsibility on the commanders of the unified and specified combatant commands to the President through the Secretary of Defense. The Chairman of the Joint Chiefs and the service chiefs were specifically omitted in this chain of command.

HUMINT	Human Intelligence
information infrastructure	Linkages of individual information systems in a myriad of direct and indirect paths that transcend industry, media and the military and include both government and non-government entities.
information operations	Actions taken to affect adversary information and information systems while defending one's own information and information systems.
information superiority	The capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.
information warfare	Information operations conducted during time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries. Also called IW.
Infrastructure	A term generally applicable to all fixed and permanent installations, fabrications, or facilities for the support and control of military forces.
"iron mountains"	Large stockpiles of armaments and munitions.
JCDC	Joint Concept Development Center
littoral	A zone of military operations along a coastline, consisting of the seaward approaches from the open ocean to the shore which must be controlled to support operations ashore, as well as the landward approaches to the shore that can be supported and defended directly from the sea.
nano-technology	The art of manipulating materials on an atomic or molecular scale to build microscopic devices.
narco-state	A country dominated by drug organizations
narco-terrorism	Terrorism financed by or conducted to further the aims of drug traffickers.

National Security Act of 1947	The National Security Act of 1947, (P.L.80-253) established the intragovernmental structure for managing the national security needs of the post-war environment. The Act defined the post-war military services, created an independent Air Force, established the Department of Defense, and created the Central Intelligence Agency. It also created the National Security Council, under the chairmanship of the President.
NATO	North Atlantic Treaty Organization
non-proliferation	Actions, programs, and initiatives to prevent or slow the spread of WMD technology, equipment, and materials. (see counterproliferation)
pandemic	Epidemic over a wide geographic area: e.g. pandemic influenza.
"posse comitatus"	The 1868 Posse Comitatus law prohibits the Army and Air Force from engaging in domestic law enforcement; a long-standing order from the Secretary of the Navy extends that prohibition to the Navy and Marine Corps.
PPBS	Planning, Programming, and Budgeting System
proliferation	The spread of WMD and associated technologies
QDR	Quadrennial Defense Review
R&D	Research and Development
rogue state	A country engaged in behavior counter to the norms of international security, such as supporting terrorism or developing weapons of mass destruction.
salvo	The simultaneous firing of a number of weapons at a given target.
sanctuary	A nation or area near or contiguous to the combat area which by tacit agreement between the warring powers is exempt from attack and therefore serves as a refuge for staging, logistic, or other activities of the combatant powers.
SAR	Synthetic Aperture Radar

sarin	Nerve poisoning gas of organic phosphorus compound developed by the Nazis in the Second World War. Pure sarin is colorless and odorless and is described as 500 times as toxic as potassium cyanide.
special operations	Operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, nonspecial operations forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets.
Special Operations Forces	Those active and reserve component forces of the military services designated by the Secretary of Defense and specifically organized, trained, and equipped to conduct and support special operations.
START II	Strategic Arms Reduction Treaty II. Nuclear arms reduction treaty between Russia and the United States. Signed between the United States and the USSR in July 1991, it would reduce strategic nuclear forces to 3,000–3,500 on each side. The U.S. Senate gave its advice and consent to ratification of the Treaty in 1996. The Russian Duma is considering the treaty for ratification.
START III	Strategic Arms Reduction Treaty III. Follow-on negotiations to reduce nuclear arsenals below levels under consideration in the START II agreement. A proposed agreement in March 1997 would reduce levels to 2000–2500 warheads on each side.
stealth	Technology that minimizes the observable aspects of a piece of military equipment, including radar and infrared signature, visibility, and sound.

transnational threats	Threats or challenges which 1) stem from and have effects across more than one state; 2) are a function of the changing balance between the nation-state's capacity and authority to use force and that of non-state entities; and 3) involve the actions of non-state actors in terrorism, organized crime, drug trafficking, and weapons proliferation.
UCP	Unified Command Plan. The document, approved by the President, which sets forth basic guidance to all unified combatant commanders; establishes their missions, responsibilities, and force structure; delineates the general geographical area of responsibility for geographic combatant commanders; and specifies functional responsibilities for functional combatant commanders.
unconventional warfare	A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes guerrilla warfare and other direct offensive, low visibility, covert, or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities, and evasion and escape.
Unified Command	A command with a broad and continuing mission under a single commander and composed of significant assigned components of two or more Military Departments, and which is established and so designated by the President, through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff.
WCF	Working Capital Fund. A revolving fund established to finance inventories of supplies and other stores, or to provide working capital for industrial-type activities.
WMD	Weapons of Mass Destruction. This usually refers to chemical, biological, and nuclear weapons and the missiles capable of carrying them. Sometimes radiological weapons are also included.